# AUTHOR INDEX

A

Aaronson, S., 145, 154, 155, 164 Abelev, G. I., 63 Abelson, P. H., 150, 151, 329, 336, 341 Abraham, G., 268 Abrosimov, V. N., 65, 72 Acosta, J., 372, 375 Adams, E., 149, 334 Adams, J., 264 Adams, J. F., 123 Adams, M. H., 179 Adelberg, E. A., 151, 165, 336 Ado, A. D., 71 Agren, G., 154 Ahlstrom, C. G., 244 Ajl, S. J., 283, 284, 292, 294 Akazawa, T., 363 Akulova, M. F., 56 Alatyrtseva, I. E., 65 Alba, A. M., see Malaga-Alba, Albert, A., 361 Albrecht, A. M., 157 Alderman, I., 10 Aleshina, E. N., 60 Alexander, H., 227 Alexander, M., 287 Alimchandani, H. R., 162 Allan, R. M., 243 Allen, G. M., 370, 371 Allen, J. R., 6 Allen, L. A., 180 Allen, P. J., 352, 363, 364 Allmann, K., 364 Altemeier, W. A., 179, 182 Altenbern, R. A., 143, 344 Altermatt, H. A., 278, 279, 280 Altman, J. S., 179 Alton, C. H., 201 Alves de Souza, M., 374 Alymov, A. I., 71, 72 Ames, B. N., 149, 333, 334 Amies, C. R., 216 Ammann, A., 355, 362 Amos, H., 333 Amundsen, L. H., 158 An, T. T., 339 Anan'ev, V. A., 62, 64 Anatolii, S. A., 66 Andersen, A. A., 183 Andersen, A. B., see Birch-Andersen, A. Anderson, A. W., 154 Anderson, H. H., 110 Anderson, H. W., 129 Anderson, R. C., 95

Anderson, S. G., 239 Anderson, T. F., 214, 220, 227, 238 Andrewes, C. H., 237, 240, 244 Andrews, H., 10 Andzhaparidze, O. G., 59, 65 Angeloff, S., 243 Anofriev, A. S., 70 Anton, A. H., 144 Apanashchenko, N. I., 65 Apliak, I. V., 72 Apollosov, K. A., 56 Aprahamian, H., 13 Arai, S., 164 Arcichovskaja, E. B., 358 Argelas, L. K., 62 Arndt, A., 27 Arnold, Z. M., 315 Arnstein, H. R. V., 343 Arshavskii, I. A., 71 Artamonova, O. I., 60 Artman, M., 331 Artz, C. P., 182, 183 Ashcroft, R., 164 Ashour, W. E., 354 Asnis, R. E., 287, 344 Aspinall, G. O., 298 Astbury, W. T., 228 Atanasiu, P., 245 Atkinson, R. E., 124 Atkinson, T. G., 352 Aubel, E., 291 Aubért, J-P., 217, 281 Auerbach, O., 103 Aurand, L. W., 147, 159, 343 Avakian, A. A., 70 Aver'ianova, L. L., 72 Axelrod, B., 329 Axelrod, S. C., 100 Ayengar, P., 333 Ayers, T. T., 120, 121 Ayres, J. C., 175 Aytoun, R. S. C., 125

В

Baba, T., 177
Bachmann, E., 362
Backus, M. P., 121, 130
Bacon, G. A., 353
Baddiley, J., 143
Badger, G. F., 88, 108
Baer, H. H., 297
Baile, D. L., 204
Bailey, R. W., 296
Bailly, J., 369
Bain, A. M., 184
Baker, E. E., 94, 216
Baker, E. G. S., 196
Baker, E. M., 178

Baker, H., 144 Baker, R. F., 256 Balaian, L. B., 66, 67 Balamuth, W., 205, 208 Balis, M. E., 154 Ballou, C. E., 276 Bamberg, R. H., 124 Banfield, W. G., 238, 239, 245 Bang, F. B., 238, 239, 245 Barban, S., 332 Barber, C. W., 4 Barber, F. W., 204 Barber, M., 54 Barclay, W. R., 96, 97 Bard, R. C., 175, 178, 285 Bardarov, A. D., 56 Bardos, T. J., 142, 163 Barker, H. A., 177, 184, 335, 340 Barker, S. A., 296, 299 Barkulis, S. S., 267 Barlow, A. J. E., 289 Barnard, J. E., 238 Barner, H., 155 Barnes, E. M., 183 Barnett, H. L., 134 Baron, L. S., 353 Barratt, R. W., 151, 336 Barrett, J. T., 117, 293 Bartell, P., 267 Bary, A. de, 116, 129 Basba, V., 256, 257 Batia, M. J., 12 Bauer, D. J., 240 Baumann-Grace, J., 218, 219 220, 226, 227, 228, 232, 233, 263, 265, 268 Bawden, F. C., 363, 364 Baxter, B., 297 Bazhedomova, M. A., 55 Bazzigher, G., 358 Beale, G. H., 321 Beale, H. P., 129 Bean, R. C., 300 Bean, W. B., 87 Beasley, A., 8 Beaudette, F. R., 242 Beck, E. S., 159, 164, 291 Beck, F., 98, 99 Beck, J. V., 177, 288, 345 Beer, J. R., 389 Beerens, H., 174, 181 Beers, R. F., Jr., 164 Begley, J. W., 104 Bektemirov, T. A., 62 Belkina, A. I., 68 Bell, J. F., 388 Bell, T. A., 132 Belostotskaia, A. N., 72 Belozerskii, A. N., 55

Blinkov, G. N., 60

Bel'tiukova, K. I., 56 Beltz, R. E., 163 Benacerraf, B., 10 Bendett, E., 7 Benedek, T. G., 102, 103 Benenson, A. S., 241 Bengston, I. A., 176 Bennett, S. C. J., 240, 243, 244 Bentley, O. G., 143, 159 Berchtold, R., 15 Berducou, J., 360 Berengo, A., 179 Berg, P., 294 Bergel, M., 4 Berger, K., 248 Bergmann, E. D., 284 Bergquist, A., 151 Bermann, L., 164 Bernhart, F. W., 156 Bernheimer, A. W., 179 Bernstein, E., 307 Bernstein, I. A., 280 Berry, L. J., 4 Berzin, V. K., 65 Bespalova, M. B., 67 Best, J. B., 297 Bett, M., 203 Beutner, E. H., 108 Bezborodov, A. M., 58 Bezudenkova, A. P., 60 Bhat, J. V., 177, 295 Biale, J. B., 364 Bibeau, A. A., 208 Bidwell, R. G. S., 289 Biehl, J. P., 95 Biester, H. E., 243, 244, 369 Bigger, J. W., 103 Bigger-Gehring, L., 332 Billet, F. S., 184 Binkley, S. B., 159, 164 Biozzi, G., 10 Birch-Andersen, A., 254, 262, 263 Bird, T. J., 147 Biriuzova, V. I., 60 Bisby, G. R., 119 Bisset, K. A., 227, 231, 257, 258 Bitancourt, A. A., 135 Bitner, K., 125 Bizzini, B., 178 Björklund, B., 179 Black, J., 380 Black, L. M., 364 Black, S., 342 Blackwell, R. Q., 285 Blackwood, A. C., 279, 280 Blagodeteleva, V. A., 56 Blakeslee, A. F., 120, 127 Blakley, E. R., 282 Bland, J. O. W., 238 Blank, H., 239, 245 Blatt, N., 106 Blaxall, F. R., 243 Blayney, J., 6

Bliss, D. E., 125 Bliuger, A. F., 59 Bloch, H., 354 Bloch, K., 336, 343, 344 Bloch, R. G., 98 Blum, L., 12, 13 Blumenthal, H. J., 283 Boake, W. C., 241, 242 Boaz, H. E., 85 Bobakova, M. I., 66 Bochagova, D. I., 66 Bocobo, F. C., 108 Bodon, G., 214, 215, 217 Bøe, J., 184 Boer, D. H. W. den, 341 Bogen, H. J., 356, 361 Boger, W. P., 143 Bohnhoff, M., 101 Böhni, E., 354, 357, 359 Bohr, D. F., 179 Bohrer, C. W., 183 Bolcato, V., 282 Boltjes, T. Y. K., see Kingma Boltjes, T. Y. Bolton, E. T., 329 Bommer, W., 238 Bond, V. P., 9 Bondarenko, G. K., 58 Bondi, A., 161 Bonner, D. M., 151 Bonner, J., 363 Bonner, J. T., 21, 22, 26, 27, 28, 33, 34, 35, 36, 43 Bonomi, U., 184 Bonventre, P. F., 299 Boone, D. M., 353 Boosalis, M. G., 125 Borodin, V. P., 69 Boroff, D. A., 179 Borowski, J., 173 Borries, B. von, 238 Boswell, F. W., 238 Bottomley, R. A., 131, 133 Bourdeau, F. G., 159, 164, 165 Bourne, E. J., 296, 299 Boussier, G., 12 Bowen, H. E., 179 Bowen, T. J., 267 Bowne, S. W., Jr., 331 Bowser, H. R., 150, 335 Boyd, J. S. K., 179 Boyd, R. B., 146, 285 Boyd, W. L., 160, 330 Boyer, N. H., 105 Boyer, P. D., 282, 286 Boylen, J. B., 155, 345 Bracken, E., 164 Bradley, D. F., 147 Bradley, S. G., 24, 25, 32, 36, 206 Brady, R. O., 294 Branco, M. C., see Correia-Branco, M. Brandl, E., 107, 108 Brandly, C. A., 2

Bras, G., 244 Braude, A. I., 101 Braun, A. C., 361, 363, 364 Braun, G. A., 157 Braun, H., 260 Braun, R., 358, 361 Breed, R. S., 268 Brefeld, O., 46, 47 Brenner, S., 148 Brewer, J. H., 174, 175 Brian, P. W., 129 Briceno Rossi, A. L., 375 Bridges, A. E., 175 Brieger, E. M., 255 Briggs, J. D., 13 Bringmann, G., 254, 255, 256 Briody, B. A., 239, 241 Britten, R. J., 329 Brock, J. F., 4 Brockman, J. A., 194 Brodie, A. F., 278 Brody, T. M., 4 Bronshtein, N. I., 70 Bronsweig, R. D., 3 Brooke, M. M., 110 Broquist, H. P., 150, 157, 161, 194 Brown, B., 151 Brown, D. H., 276 Brown, D. M., 329 Brown, E. G., 161 Brown, G. M., 143 Brown, J. G., 126 Brown, J. W., 159, 164 Brown, M. H., 179 Brown, S. A., 290, 352 Brown, W., 1, 354 Brownlee, K. A., 240 Bruckner, V., 216, 341 Brueckner, A. L., 383 Brues, A. M., 13 Bruner, D. W., 177 Brunson, J., 11 Bryant, M. P., 158, 177, 180 Bryson, V., 90, 262 Buchholtz, W. F., 130 Buddingh, G. J., 237, 242, 246, 247 Budylina, V. V., 72 Bufton, A. W. J., 395 Bugher, J. C., 12 Buller, A. H. R., 120, 124, 393 Bullock, M. W., 194 Bunch, R. L., 85 Bunting, H., 238, 239, 245 Burchenal, J. H., 88 Burgdorff, H. M., see Meyer-Burgdorff, H. Burgeff, H., 120 Burgeois, S., 293 Burgiere, J. M., 180 Burkey, L. A., 177 Burkhart, R. L., 380 Burkholder, P. R., 115 Burnet, F. M., 237, 240, 241,

242
Burns, K. F., 386, 387
Burr, M. M., 241
Burrows, T. W., 353
Burt, W. H., 371
Burukina, A. V., 59
Butler, B., 148
Butler, E. E., 119, 121, 126, 129
Butler, K., 299
Butler, K. D., 126
Butterworth, E. M., 292
Buttlaux, R., 181
Butzel, H. M., 321
Buxton, E. W., 393, 394, 399
Buzina, O. D., 61
Bychkovskaia, O. V., 55

C

Cabelli, V. J., 293 Caglioti, M. T., 393, 394 Cailleau, R., 198, 205 Calandra, J., 285 Calvin, M., 147, 289 Camargo, F., 381 Cameron, E. J., 183 Camien, M. N., 158 Campbell, J. A., 143 Campbell, J. J. R., 283, 353 Campbell, L. L., 183 Campbell, L. L., Jr., 297, 342, 345 Carbon, J. A., 285 Card, L. E., 1 Cardon, B. P., 177 Carhart, S. R., 268 Carini, A., 372 Carleton, J., 104 Carlquist, P. R., 174 Carlson, G. L., 147, 343 Carneiro, V., 374 Caroselli, N. E., 352 Carpenter, A., 89 Carroll, L., 23 Carson, S. R., 295 Carter, F. R. N., 110 Carter, J. C., 129 Cartwright, N. J., 342 Cary, S. G., 178 Caselitz, F. H., 178 Cassel, W. A., 257 Castillo, C. G., 214 Catanzaro, F. J., 105 Catcheside, D. G., 150, 336 Catchpole, H. R., 12 Caughey, P. A., 321 Caullery, M., 115, 116 Cave, M. S., 310 Cazin, J., 90 Ceithaml, J., 147, 149, 335 Cervoni, P., 8 Chabbert, Y., 107 Chain, E., 225 Challice, C. E., 178 Chambers, L. A., 227 Chamovitz, R., 105

Champneys, W. D., see Dalrymple-Champneys, W. Chamsy, H. M., 179 Chance, H. L., 256, 258, 265 Chandler, L., 102 Chandler, V. L., 175 Chang, H., 182 Chang, T., 89 Charlton, G., 163 Charnyi, S. D., 59 Chattaway, F. W., 289 Chaudhuri, S. N., 4 Cheldelin, V. H., 141, 143, 150, 151, 282, 284, 341 Chen, Y. T., 204 Cheng, S., 160 Cherburina, N. V., 59 Cherewick, W. J., 134 Chesters, C. G. C., 129 Chin, P. H., 13 Chiquoine, A. D., 36 Chistovich, G. N., 66 Christensen, B. E., 150, 151, 341 Christensen, C. M., 131, 132, 133 Christensen, J. J., 128, 351 Christie, A., 179 Christy, V. L., 203 Chu, C. M., 241 Chung, C. W., 135 Ciferri, R., 124 Cifonelli, J. A., 299 Ciminera, J. L., 143 Cincotti, J. J., 94 Ciotti, M. M., 345 Cipriani, A., 182 Citri, N., 207 Clagett, H., 88 Claridge, C. A., 284 Clark, F. Mr., 148 Clark, J. A., 285, 286 Clark, J. B., 256, 257, 258, 260, 263 Clark, R. H., 156 Clarke, P. H., 178 Clarke, W., 34 Claus, K. D., 297 Clausen, J. K., 290 Cleveland, L. R., 310, 311 Cleverdon, R. C., 159, 164 Coatney, R., 2 Cochrane, V. W., 284 Cockburn, W. C., 179 Coghlan, J. W., 297 Cohen, A. L., 21, 38, 45, 47, AH. Cohen, G. N., 342 Cohen, P. P., 337, 338 Cohen, S., 284 Cohen, S. S., 155, 281 Cohn, M., 353, 354 Cohn, M. L., 145 Coith, R., 179 Cole, J. P., 182 Colebrook, L., 173, 182 Coleman, V. R., 103, 110

Collier, L. H., 240 Collier, W. A., 241 Collins, H. S., 94 Colowick, S. P., 345 Conant, N. F., 108 Congdon, C. C., 9 Conner, R. L., 196, 197, 198 Constantine, D., 370, 387 Conway, H., 182 Cook, M. T., 130 Coons, A. H., 233 Cooper, C. D., 4 Cooper, D., 10 Cooper, J. R., 276 Corliss, J. O., 321 Cormack, M. W., 134 Correia-Branco, M., 108 Cosar, C., 7 Cosgrove, W. B., 205 Cosslett, V. E., 255 Coughlin, C. A., 151, 165, 336 Courter, R. D., 383 Cowie, D. B., 329 Cowperthwaite, J., 157, 205, 206, 207 Coy, H. N., 265 Crabbe, J., 11 Craigie, J., 241, 247 Crawford, G. N. C., 239 Crawford, I. P., 282 Cresson, E. L., 146, 150 Crocker, C. G., 228, 268, 269 Croissant, O., 245 Cronkite, E. P., 9 Crowley, N., 299 Crowley, W., 108 Cruickshank, J. C., 181 Cuckow, F. W., 265 Cuendet, A., 10 Culbertson, C., 110 Cummings, M. M., 98, 99 Cummins, C. S., 267 Cunningham, C. H., 243, 244 Curran, H. R., 227 Curtis, A. C., 108 Curtis, J. T., 130 Cutinelli, C., 254 Cutter, V. M., Jr., 136, 352

D

Dack, G. M., 94, 181, 183
D'Aeth, H. R. X., 129
Dafaalla, E. N., 177
Dagley, S., 278, 291
Dallenbach, F. D., 89
Dalrymple-Champneys, W., 1
Daly, J. J., 202
Dangeard, P. A., 45
Danielli, J. F., 313, 356, 361
Dannenberg, A. M., 14
Darby, G. E., 182
Darley, E. F., 125
Darnell, J. E., 104
Darwin, C. R., 371
Dasgupta, N. N., 257
Dass, C. M. S., 320, 321

Davey, W. N., 103 Davidoff, D., 13 Davies, A. M., 8, 13 Davies, D. A. L., 298 Davies, R., 353 Davis, B. D., 103, 151, 329, 333, 334 Davis, D., 357, 358 Davis, I., 109 Davis, J. B., 182 Davis, J. W., 341 Davis, K. J., 6 Davis, W. B., 389 Dawborn, M. C., 160 Dawes, E. A., 278 Dawling, M. T., 199 Dawson, H., 356, 361 Dawson, I. M., 238 Dawson, J. M., 227 Day, M. F., 243 Day, T. D., 8, 13 De, M. L., 257 Dean, A. C. R., 354 Dearing, W. H., 183 de Bary, A., see Bary, A. de De Blieck, L., 242 DeBusk, B. G., 194 Dedic, G. A., 175 Dedonder, R., 276, 296, 298 de Flines, J., see Flines, J. de Deibel, R. H., 156, 164 de Jong, M., see Jong, M. de Dekking, F., 243, 246 de la Haba, G., see Haba, G. de la DeLamater, E. D., 254, 258, 259, 262 Delaporte, B., 257 de Leizaola, M., see Leizaola, M. de De Ley, J., 284 Del Love, B., 107 Delmotte, N., 256 Delsal, J. L., 179 Delwiche, E. A., 295, 331 DeMello, G. C., 90, 183 Demerec, M., 90 De Moss, J. A., 290 De Moss, R. D., 282 den Boer, D. H. W., see Boer, D. H. W. den Denes, G., 341 Denman, R. F., 142, 329 Denneny, J. M., 286 Dennis, R. L., 161 Dennison, W., 214 DePalma, R. E., 147, 343 De Queiroz Lima, E., 374 de Robertis, E., see Robertis, E. de de St. Phalle, M., see St. Phalle, M. de de Souza, M. A., see Alves de Souza, M.

Deuel, H., 361

Deuschle, L. O., 97

DeVay, J. E., 115-40; 127, 128, 351 De Vertuil, E., 375, 377, 378, 379 Devi, L. S., see Saraswathi-Devi, L. Dewey, D. L., 329 Dewey, V. C., 155, 194, 195, 199, 200, 201 Dickens, F., 276 Dickinson, S., 121 Dickson, B. T., 124 Diding, N. A., 142 Dieckmann, C., 181 Diercks, F. H., 102 Diller, W. F., 321 Dimond, A. E., 351, 357, 358, 359, 360 Dingle, J. H., 88, 105, 108 Dippell, R. V., 199 Ditmars, R. L., 371 Dobbs, C. G., 120, 122, 126, 128 Dodson, L. F., 96 Doetsch, R. N., 158, 180 Doflein, F., 310 Dolgov, A. F., 62 Dolin, M. I., 277, 295 Dolman, C. E., 177, 184 Domsch, K. H., 352 Donaldson, D. M., 10, 11, 101 Donovick, R., 240 Doolittle, S. P., 357 Dooneief, A. S., 98 Doorschodt, H. J., 241 Dorfman, A., 12, 298, 299 Doudoroff, M., 284, 296 Dougherty, E. C., 201 Dougherty, T. F., 5, 6 Douglas, S. R., 173, 182 Dow, D., 2 Dowling, H. F., 88, 92, 106, 107, 108 Downie, A. W., 237-52; 241, 242, 245, 246, 247 Drake, B. L., 101 Drankin, D. I., 69 Drechsler, C., 118, 127 Dreyfus, E. G., 105 Drimmelen, G. C. van, 164 Driscoll, C. A., 146 Dubos, R. J., 1, 3, 4, 8, 10, 99, 100, 213, 215, 216 Dubrova, V. S., 59 Dubrovskaia, I. I., 69 Dudman, W. F., 298 Duff, R. B., 295 Duguid, J. P., 214, 264 Dumbell, K. R., 237-52; 242, 245 Dunn, H., 371 Dunn, M. S., 158 Duran, A., 374 Durasova, M. N., 65 Dusi, H., 205 Duthie, E. S., 5 Dutton, A. A. C., 5

du Vigneaud, V., see Vigneaud, V. du

E

Eads, R. B., 385, 389 Eagle, H., 85, 89, 109 Eagon, R. G., 298 Eakin, R. E., 145 Eales, C. E., 179 Earl, J. M., 279 Eaves, G., 239 Ebert, R. H., 96 Eckhardt, E. R., 156 Eddie, B., 182 Eddy, C. A., 159 Edel'man, B. E. G., see Gres'-Edel'man, B. E. Edmunds, P. N., 264 Edsall, G., 179 Edwards, P. R., 214 Edwards, T. E., 299 Egelhaaf, A., 320 Eggleston, L. V., 293 Eglits, M., 363 Egorov, N. S., 60 Ehrensvard, G., 329 Eide, C. J., 121, 351 Eimhjellen, K. E., 293 Eisenberg, M., 294 Ekstedt, R. D., 267 Ekstrand, H., 127 Elberg, S., 1-20; 8, 9, 13, 14 Eldridge, D., 34 Elford, W. H., 178 Elford, W. J., 238 Elliker, P. R., 154 Elliot, A. M., 195, 321 Elliott, C. G., 395 Ellison, S. A., 239, 245 Emard, L. O., 175 Emmelot, P., 341 Emmons, C. W., 122 Enebo, L., 177, 180 Engel, M. B., 12 Englesberg, E., 216, 291 English, A. R., 106 English, M. P., 120, 122, 126, 128 Enikeeva, M. G., 60 Enjumet, M., 314 Enkoji, T., 163 Ennis, H. L., 32 Enright, J. B., 369-92; 387 Eppinger, H., 356, 361 Epstein, B., 239 Epstein, L. A., 225 Erdös, L., 217 Erikson, D., 183 Ernand, A., 60 Ertuganova, Z. A., 61 Ervin, R., 6 Esplin, D. W., 10, 101 Essel, A. E., 64 Etchells, J. L., 132 Etinger-Tulczynska, R., 214 Evans, D. G., 5

Evans, F. R., 227 Evans, J. B., 164, 295 Evans, J. M., 174 Evenson, M. A., 164 Eyring, H., 6

#### F

Fabricant, C., 255, 264 Fåhraeus, J., 179 Falk, I. S., 5 Faller, L., 87 Farinacci, C. J., 386 Farmer, V. C., 295 Farrant, J. L., 238 Fauré-Fremiet, E., 203, 319, 320 Favour, C. B., 9, 14 Fawcett, H. S., 115, 133, 134 Fedorinchik, N. S., 123 Fedorov, M. V., 58, 60, 61 Feeney, R. E., 174, 182 Feiner, R. R., 225 Feldman, A. W., 352 Fellows, H., 121 Felsing, B., 158, 162 Felton, E. A., 164 Fennell, D. I., 29, 34, 399 Fenner, F., 238, 239, 240, 243, 244, 248 Fergus, C. L., 164 Few, A. V., 266 Field, M. F., 164 Fierst, S. M., 94 Fiese, M. J., 108 Fife, M. A., 214 Filfus, J., 204 Fine, J., 13, 101 Finger, D., 101 Finkelstein, R. A., 164 Finland, M., 91, 105, 107, 108 Fintiktikova, R. P., 72 Fischer, H., 363 Fischer, H. O. L., 276 Fish, C. M., 110 Fisher, A. M., 94 Fisher, E. R., 244, 245 Fishman, M., 13, 14 Fitz-James, P. C., 260 Fleming, A., 173, 182 Fleming, D. E., 164, 339 Fleming, P. J., 202 Fleming, T. C., 183 Flewett, T. H., 239 Flines, J. de, 158 Floethmann, E., 254 Florey, H., 9 Florey, H. W., 96, 107 Flück, V., 359 Flynn, E. H., 85 Foley, E. J., 102 Folkers, K., 163 Folkes, J. P., 345 Follmann, G., 356, 361 Fomicheva, A. S., 56 Fontaine, F. B., 177 Fontaine, T. D., 357

Forbes, E., 393, 395, 397 Ford, J. E., 143 Fordham, D., 194 Formal, S. B., 353 Forrest, H. S., 158 Forshter, K. K., 56, 65 Förster, H., 307, 308 Fosdick, L. S., 285 Foshay, L., 339 Foster, J. W., 344 Foster, L., 7 Foster, L. E., 216 Fothergill, P. G., 164 Foulkes, E. C., 293 Fowler, H. D., 352 Fraenkel, G. S., 158 Frank, B., 116 Frank, E., 13 Frank, E. R., 184 Franke, W., 345 Franklin, A. L., 203 Franklin, R., 353 Frascella, E., 36, 43 Fredette, V., 179 Freedland, R. A., 298 Freeman, E. M., 116 Freeman, M. E., 178 Frei, W., 356 French, A. M., 353 French, C. E., 6 Frenkel', G. M., 56 Frenkel, J. K., 7 Friedman, M. E., 162 Friedman, S., 158 Fries, N., 162 Fritze, E., 11 Fry, B. A., 340 Fry, R. M., 7 Frye, W. W., 110 Fuchs, W. H., 357 Fujii, R., 241 Fukuhara, T. K., 163 Fukui, K., 231, 233 Fukushi, K., 255 Fukuya, J., 226, 227, 230, 231, 233, 265, 266 Fuller, R. C., 147, 199, 200, 289 Fuller, W. H., 180 Fulton, M., 268 Furste, W. L., 182

### G

Fuwa, A., 241

Galach'iants, O. P., 62 Galaev, L. V., 58 Gale, D., 8, 13 Gale, E. F., 345, 353, 354 Gallop, R. C., 8, 13 Galton, M. M., 384 Gal'tsova, R. D., 57 Gamaleia, N. F., 64 Ganapati, P. N., 317 Ganley, O. H., 179 Garay, A. S., 355, 358 Garber, E. D., 353 Gardner, M. V., 179 Garner, J. M., 352 Garren, H. W., 4 Garren, K. H., 131, 133 Garrett, S. D., 129, 133 Garrod, L. P., 108 Gary, N. D., 277 Gaspar, A. J., 179 Gassner, G., 364 Gauhe, A., 297 Gäumann, E., 351, 352, 354, 356, 357, 358, 359, 361, 362, 363, 364 Gavrilov, V. I., 63 Gaylord, W. H., 238, 239, 245 Geach, W. L., 134 Geddes, W. F., 131, 133 Gehring, L. B., see Bigger-Gehring, L. Geitler, L., 322, 323, 324, 325 Geller, P., 101, 102 Gel'man, N. S., 57 Gemmel, A. R., 133 Genghof, D. S., 146 Geoffroy, M., 179 Georg, L. K., 164 Geraci, J. E., 103, 183 Gerhardt, P., 164 Gershenzon, S. M., 53 Gest, H., 287, 288 Gey, G. O., 238, 239, 245 Gibbons, N. E., 264 Gibbs, E. W., 182 Gibbs, M., 279, 280 Gibson, F., 148 Gieskin, R. F., 164 Gigger, R. P., 331 Gillen, A. L., 241 Gillespie, J. M., 179 Gilmore, J. P., 202 Gilmour, C. M., 292 Gilvarg, C., 151 Gilyard, R. T., 371, 375, 377 Gimmel'farb, I. K., 64 Gindin, A. P., 56, 70 Ginoza, H. S., 143, 344 Ginsberg, M., 108 Giovannini, M., 107, 108 Girbardt, M., 265 Giri, K. V., 297 Giron, A. T., 372, 381 Girshik, B. I., 66 Gispen, R., 241 Giuntini, J., 241, 269 Gjessing, E. C., 153 Glaser, L., 276 Glaser, R. J., 104 Glass, B., 329 Glauert, A. M., 255 Glazener, M. R., 147 Glick, M. C., 287 Glinos, E. B., 158 Gloor, E. T., see Tarr Gloor, E.

Glover, R. E., 248

Goeze, G., 364

Goddard, D. R., 363

Gogolak, F. M., 92 Gold, W., 178 Goldberg, R., 207 Goldfield, M., 89, 105 Goldin, M., 268 Goldman, L., 179 Goldsmith, G. A., 100 Goldstein, A., 165 Golinevich, E. M., 69 Gomez, C. G., 332 Gönnert, R., 243 Goodpaster, W., 389 Goodpasture, E. W., 237, 238 Goodwin, T. W., 161 Gorbunova, A. S., 56 Gorbunova, T. S., 70 Gordon, H. A., 6 Gordon, H. L., 142, 163 Gordon, J., 175 Gordon, L. E., 10, 108 Gordon, M., 145 Gordon, P., 7 Gordon, W. S., 178 Gothoskar, S. S., 357, 358 Gots, J. S., 147, 154, 345 Gottlieb, D., 129, 352, 361 Goucher, C. R., 286 Govendiaeva, A. V., 59 Gözsy, B., 11 Grabar, P., 51-84 Grace, J. B., see Baumann-Grace, J. Grady, H. J., 337, 338, 339 Grady, J. E., 201 Graf, L. F., 277 Granick, S., 307 Grant, I. W. B., 98, 99 Graseé, P. P., 315 Gray, D. F., 182 Gray, J., 267, 298 Gray, J. A. B., 177 Greathouse, G. A., 299 Green, M., 281 Green, R., 4 Green, R. H., 238 Greenberg, G. R., 145 Greenberg, J., 2 Greenberg, L., 179 Greene, H. C., 122, 123, 125 Greenhall, A. M., 371 Greenman, V., 13 Gregg, J. H., 36 Gregory, M. E., 143 Grell, K. G., 307-28; 307, 314, 315, 316, 317, 318, 319 Grenan, M., 10 Gres'-Edel'man, B. E., 72 Gretler, A. C., 164 Greve, M. J., 383 Griffin, P. J., 155 Griffiths, D., 122 Grigor'ev, I. A., 63 Grigor'eva, V. M., 68 Grimes, B. A., 389 Grimes, J. E., 385 Grisebach, H., 147 Grisolia, S., 337, 338, 339

Gromov, A. S., 68 Gromyko, E. P., 60 Gross, D., 343 Grossenheider, R. P., 371 Grossman, J. P., 294 Grossowicz, N., 164, 207 Grotte, G., 8, 13 Groupe, V., 238, 240 Grove, D. C., 108 Grubb, R., 177 Gruchy, D. F., 321 Grula, E. A., 266 Grunberg-Manago, M., 294 Grzybowski, S., 98 Guarino, A. J., 277 Guelin, A., 178 Guex-Holzer, S., 215, 217, 218, 219, 220, 225, 226, 227, 230, 231, 232, 263, 264 Guha, A., 257 Guillaumie, M., 179 Guilliermond, A., 259 Guirard, B. M., 194 Gukasian, G. B., 70 Gunnison, J. B., 103, 109, 110 Gunsalus, I. C., 141, 194, 276, 278, 280, 333 Gurin, S., 293 Gürtürk, S., 178 Guslits, S. V., 62 Guthrie, R., 150 Gyi, K. K., 11 Gylfe, J. S., 143 Gyllenberg, H., 156 György, P., 156, 157, 163, 297

H

Haas, V., 184 Haba, G. de la, 276 Haberman, R. T., 9 Hackett, A. J., 353 Hackett, P. L., 197 Hackney, A., 36 Hadlow, W. J., 388 Hadorn, E., 158 Hage, T. J., 383 Hagemann, G., 342 Hahn, G. E., 345 Hahne, H., 10 Hain, E., 181 Haines, R. B., 179 Hakala, M. T., 144 Haldane, J. B. S., 1, 2 Hale, C. M. F., 227, 228, 259 Hales, F., 148 Hall, A. N., 283 Hall, B., 104 Hall, I. C., 174, 182 Hall, L. M., 338 Hall, R. M., 94 Hall, R. P., 195 Hall, W. W., 179 Halliday, W. J., 164 Halmlund, C. E., 296

Halpern, B., 10 Halpern, B. N., 15 Halsey, Y. D., 277 Halsted, B. D., 123 Halvorson, H. O., 333, 344 Hamburger, M., 104 Hamilton, L., 198 Hamilton, P. B., 283 Hammerstrom, R. A., 297 Hammon, W. M., 383 Hammond, C. W., 10 Hampson, C. R., 182 Hampton, O. P., 179 Hamre, D., 240 Hankin, L., 159 Hansen, A. U., 184 Hansen, B., 141 Hansen, I. A., 293 Hansen, K., 181 Hansen, N. H., see Hvid-Hansen, N. Hansen, R. G., 298 Hanshoff, G., 155, 338, 339 Hanson, R. P., 2 Happel, M. E., 282 Hardaway, R. M., 94 Harding, W. M., 161 Hardy, A. V., 383, 384 Hardy, L. M., 106 Hare, R., 184 Harisijades, S., 244 Harned, R. L., 97, 107 Harrell, E. R., 108 Harrell, W. K., 344 Harris, D. A., 97, 107 Harris, D. L., 141, 294 Harris, H., 267 Harris, H. A., 362 Harris, J. S., 108 Harrison, R., 6 Harris-Smith, P. W., 7, 8, 13 Hart, P. D., 100 Hartman, P. E., 149, 256, 263 Hartman, R. E., 160 Hartmann, M., 311, 313, 324 Hartsell, S. E., 266 Haseeb, M. A., 240, 242, 243, 244, 246, 248 Hashimoto, T., 226, 227, 230, 231, 233, 266 Haskins, C. P., 195 Hassid, W. Z., 300 Hassinen, J. B., 156 Hatt, J. L., 339 Hauge, J. G., 282 Haupt, H., 373, 374 Hawkins, J. E., 332 Hawkins, K. L., 289 Hawn, E. J., 134 Hayaishi, O., 294, 295, 335 Hayaishi, T., 335 Hayashi, T., 360 Hayes, R. E., 45, 195, 321 Hayward, N. J., 177, 182 Heagy, F. C., 395

Hochster, R. M., 277, 284

Heald, K., 284 Healy, W. B., 160 Hechter, O., 3, 102 Hedgecock, L. W., 4 Heenan, E. F., 142 Heerde, A. F. v., 241 Heidelberger, M., 264 Heilman, F. R., 108, 183 Heinmets, F., 214 Heinrich, M. R., 195 Helbert, D., 246 Heller, H. H., 176 Hellinga, J. J. A., 364 Hellinger, E., 177, 180 Hemmons, L. M., 395 Hench, M. E., 14 Henderson, R., 164 Hendlin, D., 156, 203 Heneage, P., 330 Henley, D., 14 Henry, S. M., 203 Herbst, E. J., 158 Herman, C. M., 244 Herri, A. A., 175 Herr, R. R., 163 Herrell, W. E., 108, 110, 183 Herrlich, A., 246 Hershberger, T. V., 159 Hershey, A. D., 215 Hervey, A., 164, 203 Hertig, M., 116 Herzberg, K., 238, 246 Hestrin, S., 8, 13 Hewitt, W. L., 107 Hewson, K., 179 Heyningen, W. E. van, 178, 354, 359 Hiatt, H. H., 276 Hibler, W. von, 173 Hicks, R. M., 332 Hidy, P. H., 97, 107 Hietala, P. K., 330 Higginbotham, R. D., 5, 6 Hildes, J. A., 89 Hill, C. H., 4 Hill, D. L., 289 Hillier, J., 255, 264, 265 Hilz, H., 294 Himmelweit, F., 238 Hine, D. C., 160 Hinshaw, H. C., 95 Hinshelwood, C., 354 Hinton, T., 158 Hirano, T., 260 Hirsch, J. G., 100 Hirsch, M. L., 342 Hirsch, M. M., 92 Hirschberg, E., 32, 36 Hirt, R., 15 Hite, K. E., 98 Ho, W. C., 130 Hoagland, C. L., 240 Hoare, D. S., 142, 150, 329 Hobbs, B. C., 181 Hobby, G. L., 100, 103 Hobson, P. N., 299 Hoch, F. L., 278

Hockenhull, D. J. D., 286 Hoeprich, P. D., 299 Hoffert, W. R., 383, 384 Hoff-Jørgensen, E., 141 Hoffman, A., 268 Hoffman, C. E., 194, 203 Hoffman, H., 184 Hoffmann-Ostenhof, O., 353, 354 Hoffmeister, D. F., 389 Hofmann, K., 156 Hogeboom, G. H., 278 Holden, J. T., 141, 344 Holdsworth, E. S., 143 Hollande, A., 314 Holman, R. A., 175 Holmes, F. O., 237 Holtman, D. F., 299 Holz, G. G., Jr., 196 Holzer, A. R., 92 Holzer, S. G., see Guex-Holzer, Ipsen, J., 179 S. Irons, J. V., 385 Hong, R. F., 164 Hopkins, W. J., 283 Horecker, B. L., 276 Horgan, E. S., 240, 242, 243, 244, 246, 248 Hornberger, C. S., 194 Horsfall, F. L., 12 Horstmann, D. M., 240 Horst-Meyer, H. Z., 4 Horne, R. W., 226, 227, 229 Horvath, S., 218 Hotchin, J. E., 178 Hotchkiss, R. D., 226, 281 Hotson, H. H., 352 Hottle, G. A., 179 Housewright, R. D., 179, 332 Houwink, A. L., 228, 233, 265 Howard, J. G., 178 Howard, J. M., 182, 183 Howath, G., 11 Howe, C. W., 93, 106 Howie, J. W., 351 Hoyo, H., 230 Hrenoff, A. K., 110 Hu, C. K., 247 Hubert, E. E., 124 Hudson, C. B., 242 Hudson, D. G., 107 Huet, M., 173, 177, 182 Huff, J. W., 155 Hugh, R., 268 Hughes, D. E., 143 Hughes, L. C., 352 Hughes, R., 5 Huhtanen, C. N., 156, 204 Hull, T. G., 369 Hungate, R. E., 177, 180, 184, 209 Hunter, G. D., 286 Hunter, M. E., 259, 262 Hunter-Szybalska, M. E., 262 Huppert, M., 90 Hurst, E. W., 240, 372, 377,

Hurst, V., 94 Hurwitz, J., 330 Hutchinson, W. G., 257 Hutner, S. H., 144, 195, 203, 204, 205, 206 Hutt, F. B., 1 Hvid-Hansen, N., 184 Hydén, H., 245

Iablonskaia, V. A., 62, 69 Iamolova, N. S., 61 latsmirskaia-Krontovskaia, M. K., 70 Ikawa, M., 141, 143, 150, 331, 344 Imshenetskii, A. A., 57, 61 Ingram, M., 183 Inoi, S., 231, 233 Inoue, S., 255 Irtlach, B. I., 66 Irving, G. W., 357 Itatani, M. K., 92 Iterson, W. van, 228 Ivanov, V. I., 58 Ivanova, N. A., 53, 54 Ivanova, S. P., 66 Ivanovics, G., 216, 217, 218 Ivler, D., 295 Iyengar, O. P., 322 Izaki, K., 339 Izralimskii, A. S., 62

Jaag, O., 362 Jackson, A. W., 339 Jackson, G., 89 Jackson, G. G., 92, 100, 106 Jacobson, L., 364 Jacobson, W., 255, 256 Jacotot, H., 244 Jaenicke, L., 145 Jahn, J. P., 101, 103 Jahn, T. L., 307 James, A. E., 296 James, P. C. F., see Fitz-James, P. C. Jawetz, E., 85-114; 89, 99 101, 102, 103, 104, 106, 108, 109, 110 Jay, G., 2 Jayasuriya, G. C. N., 295 Jayle, M. F., 12 Jebb, W. H. H., 164 Jeckeln, E., 181 Jellison, W. L., 388 Jenkins, L. C., 179 Jennison, M. W., 164 Jenson, W. I., 178 Jevons, M. P., 299 Jinks, J. L., 128 Jochims, J., 181 Johansson, D. R., 175

Johnson, B. A., 109 Johnson, B. C., 143 Johnson, F. H., 214, 233 Johnson, H. N., 369 Johnson, H. R., 381, 382, 387 Johnson, J. R., 103 Johnson, M. J., 177, 296 Johnson, R. R., 159 Johnson, W. H., 193-212; 196, 197, 198, 201 Jonassen, O. T., 94 Jones, D. R., 352 Jones, I. D., 132 Jones, M. E., 294, 337, 338 Jones, M. J., 148 Jones, M. T., 179 Jones, W. F., 108 Jong, M. de, 245 Jonsen, J., 184 Jordan, D. C., 333 Jordan, W. S., 88, 108 Jørgensen, E. H., see Hoff-Jørgensen, E. Josten, J. J., 286 Jucker, O., 156 Jude, A., 7 Juhasz, E. K., see Kovacs-Juhasz, E. Jukes, T. H., 108, 194, 203 Jurik, M. J., 59

Kadatskaia, K. P., 61 Kadull, P. J., 179 Käfer, E., 393, 396, 397 Kagan, B. M., 87 Kahler, H., 238, 239 Kaitmazova, E. I., 69 Kakutani, J., 226, 227, 230. 231, 233, 265, 266 Kalan, E. B., 147, 151 Kalinichenko, L. A., 54 Kallio, R. E., 293, 333, 343 Kaluzewski, S., 263 Kalyanasundaram, R., 160, 364 Kaminski, Z. C., 161 Kann, E. E., 339 Kanski, M., 332 Kantorowicz, A., 226 Kaplan, D., 179 Kaplan, H. S., 101 Kaplan, N. O., 345 Kapros, C. E., 214 Karling, J. S., 117 Karnofsky, D. A., 88 Karpenko, M. K., 56 Karpov, M. K., 71 Karpov, S. P., 61 Karrer, P., 158 Kasai, G. J., 184 Kasatkina, I. D., 57 Kass, E. H., 3, 102, 108 Katagiri, M., 151, 290 Katitch, R. V., 178, 179 Kato, L., 11

Kato, T., 256 Katsuki, H., 146, 289 Katz, A. M., 294 Katz, S., 88, 108, 179 Katznelson, H., 129, 284 Kauffmann, F., 330 Kausche, G. A., 238 Kautter, D. A., 162 Keener, P. D., 123 Keitt, G. W., 353 Kekcheeva, N. G., 62 Keleher, M. F., 182 Kellenberger, E., 262 Kellow, W., 104 Kelly, J. W., 4 Kempe, C. H., 241 Kempe, H. C., 110 Kennedy, H. E., 159 Keppie, J., 7, 179, 182 Kern, H., 351-68; 356, 357, 358, 359, 361 Kerr, D. E., 182 Kerr, N. S., 28 Ketchell, M., 9, 14 Keynan, A., 285 Khait, S. L., 65 Khambata, S. R., 295 Khatenever, M. L., 67 Khatuntsev, V. V., 72 Khatuntsev, V. V., Kheifets, L. B., 57 Khitova, E. I., 53, 54 Kholod, A. E., 56 Khorazo, D., 225 Kidder, G. W., 155, 193, 194, 195, 199, 200, 201 Kieber, R. J., 299 Kihara, H., 153, 161, 342 Kikuth, W., 243 Kilbourne, E. D., 8 Kilham, L., 244 Killander, A., 143 Kimball, A., 184 King, D. S., 98 King, H. K., 227 King, N. K., 288 King, T. E., 141, 143, 282 King, T. H., 119 Kingma Boltjes, T. Y., 228 Kingma Boltjes, 1. 1., 2 Kinoshita, S., 178 Kinsell, L. W., 101, 103 Kipnis, G. P., 89 Kirby, W. M. M., 107 Kirilenko, O. A., 67 Kirsner, J. B., 181 Kiser, J. S., 90, 183 Kitchenko, A. V., 72 Kizer, D. E., 147, 159, 343 Kladnitskaia, E. I., 65 Klein, R. M., 363, 364 Kleinschmidt, A., 238 Klieneberger-Nobel, E., 214, 265 Klimentova, A. A., 71 Klüpfel, D., 359 Klybas, V., 276 Knaysi, G., 253-74; 231, 255, Krieger, C. H., 1 256, 257, 259, 261, 264, 265, Krimsky, I., 277

267, 269, 270 Kneeland, Y., Jr., 263 Knight, B. C. J. G., 164 Knight, V., 92, 94 Knishige, E., 103 Knöll, H., 254 Knoll, K. H., 264 Knoll, M. L., 269 Knowlton, A. I., 8 Kobrina, I. P., 59 Koch, L. W., 121 Koch, O. G., 175 Koch, W., 179 Koch, W. J., 117 Kocholaty, W., 286 Koch-Weser, D., 96 Koffler, H., 269 Kofman, S., 106 Kogl, F., 341 Kohn, J., 181 Kohn, R., 15 Koike, M., 255 Kokorin, I. N., 62 Kolderie, M., 36 Kon, S. K., 143 Konikov, A. P., 54 Kono, A., 231, 233 Konstantinova, V. I., 72 Kooiman, P., 355 Koontz, P., 34 Koprowski, H., 269, 380 Koreniako, A. I., 60 Korey, S. R., 294 Korff, R. von, 11 Korkes, S., 4, 287 Korn, D., 283 Kornberg, A., 155 Kornberg, H. L., 276 Kornblum, J., 161 Korneeva, G. F., 59 Korobkova, E. I., 69 Korol'kova, M. I., 72 Koser, S. A., 164 Kostiaeva, A. A., 56 Kostiukova, N. N., 62 Kotte, E., 357 Kough, R. H., 384 Kovachevich, R., 276, 277 Kovacs, A., 15 Kovacs, J., 341 Kovacs-Juhasz, E., 15 Kovalevskaia, I. L., 68 Kozlova, E. I., 60 Krakoff, I. H., 88 Kramár, E., 215 Kramer, J., 183 Krampitz, L. D., 289, 290 Krasil'nikov, N. A., 56, 60 Krasnova, V. G., 65 Krasnovskii, A. A., 58 Kraus, R., 374 Krebs, H. A., 293 Kréguer, A., 178, 179 Krichevsky, M. I., 280 Krieg, A., 254, 258 Krieger, C. H., 143

Kriss, A. E., 60 Kristensen, H. P. O., 143 Kristoffersen, T., 331 Krivanek, J. O., 36 Krontovskaia, M. K. I., see latsmirskaia-Krontovskaia, M. K. Krotokov, G., 289 Krzemienewski, H. S., 47 Krzemienewski, S., 47 Kuć, J., 358 Kucherenko, V. D., 71, 72 Kucker, G., 207 Kudlai, D. G., 55 Kudo, R. R., 23 Kuff, E. L., 278 Kuhn, R., 157, 297 Kulka, D., 283 Kulp, W. L., 159, 164 Kupferberg, A. B., 201 Kupferberg, L. L., 277 Kupletskaia, M. B., 57 Kuragina, R. V., 55 Kurimoto, U., 241 Kushina, L. K., 56 Kushner, D. J., 292 Kvittingen, J., 270

L

LaBaw, E. K., 97, 107 Labaw, L. W., 263, 265, 268 Laboret, H., 7 La Haba, G. de, see Haba, G. de la Lahelle, O., 184 Lakshminarayanan, K., 359 Lamanna, C., 178 Lamdina, V. A., 60 Lamming, G. E., 7 Lancefield, R. C., 216 Lane, R. F., 182 Lang, L. P., 88 Lanigan, G. W., 177, 180 Lankford, C. E., 164, 230 Lanning, M. C., 284 Lansford, E. M., Jr., 158 Lark, C. T., 154 Lark, K. G., 260 Larsen, A. M., 175 Larsen, H., 293 Larson, A., 7 Larson, A. D., 333, 343 Laszlo, S., 158 Latysheva, N. I., 64 Lavigne, J. B., 163 Lawrence, N. L., 345 Leach, F. R., 295 Leach, J. G., 115 Leaver, F. W., 281 Lebedinskii, V. A., 71 Lebert, F., 174 Le Bris, J., 178 Le Calvez, J., 314, 315 Lecce, J. G., 151, 265 Leder, I. G., 276 Lederberg, J., 44

Lee, F., 27, 28, 41 Lee, H. A., 133 Lee, J. M., 146 Lees, T. M., 106 Lehmkuhl, A., 159 Leifson, E., 267, 268 Leizaola, M. de, 298 Lennert-Petersen, O., 183 Lennette, E. H., 388 Lentsner, A. A., 56 Lentz, C. P., 293 Lentz, K., 280, 282 Leont'eva, N. F., 72 Lepine, P., 239, 245 Lepow, I. H., 12, 13, 179 Lepper, M. H., 90, 91, 92, 106 Leroux, R., 7 Lesniak, S. V., 68 Lessel, E. F., Jr., 268 Letunova, S. V., 60 Levin, G. M., 163 Levine, L., 179 Levine, M. N., 124 Levinson, H. S., 355 Levy, E., 238, 239, 245 Levy, J. B., 216, 291 Lewin, R. A., 294, 307, 308, 309 Lewis, G. M., 178, 179 Lewis, K. F., 283 Ley, H. L., 102 Lezius, A., 181 Liampert, I. M., 67 Lichstein, H. C., 285, 330 Lichty, J. A., 179 Lieb, M., 262 Lieberman, I., 155 Lichstein, H. C., 146, 160, 164 Lilly, D. M., 201, 202, 203 Lilly, H. A., 175 Lilly, V. G., 134 Lima, E. De Q., see De Queiroz Lima, E. Limasset, P., 351 Linardos, C. G., 164 Lind, H. E., 108 Lindberg, R. B., 182, 183 Lindsay, J. W., 372, 374, 375 Lindstrom, E. S., 277, 291 Link, G. K. K., 363 Linnane, A. W., 287, 293 Linskens, H. F., 362 Lipmann, F., 278, 294, 337, 338 Lisina, S. P., 70 Littauer, U. Z., 284 Little, P. A., 205 Litwin, J., 340 Liu, C., 263 Liubimova, V. I., 58 Livings, D. G., 98, 99 Lloyd, B. J., Jr., 238, 239 Lloyd, G. M., 248 Lobanova, A. V., 58 Locke, L. A., 151, 336 Lockhart, W. R., 175

Loeser, E., 158 Loeven, W., 12 Logan, M. A., 179 Loh, W. P., 93, 94 Loiseau, J., 182 Long, A. P., 179 Long, C., 276, 284 Long, P. H., 108 Loosli, J. K., 159 Lorch, I. L., 313 Lorenz E., 9 Love, S. H., 154, 345 Lovelock, J. E., 6 Lowbury, E. J. L., 175 Lowell, F. C., 87 Lowenthal, J. P., 178 Lowther, D. A., 299 Lowy, P. H., 344 Lowy, R. S., 207 Lucas, G. B., 117 Ludányi, G., 11 Ludowieg, J., 298, 299 Lupina, M. I., 65 Lurie, M. B., 2, 3, 6, 102 Lush, D., 240 Lutteringer, J. F., 230 Luzzati, D., 150, 154 Lwoff, A., 193, 205, 206 Lyman, C. M., 148, 164 Lynau, V., 164 Lynen, F., 294 Lynn, R. J., 151 Lyon, M. W., 371 Lyons, C., 179

M

Maaloe, O., 254, 260, 263 McAlpine, D., 123 McBee, R. H., 177, 180, 297 MacCallum, F. O., 247 McCarthy, K., 241, 242, 246 McCarty, M., 229 McClean, D., 240 McClung, L. S., 173-92; 173, 174, 175, 178, 181 McCormack, B. R. S., 92 McCoy, E., 164, 174, 176, 177, 180 McCoy, E. F., 177 McCune, R., 97 McDermott, W., 97 Macdonald, A., 241, 248 MacDonald, A. D., 15 MacDonald, D. L., 276 MacDonald, J. B., 269 Macdonald, K. D., 395 McDougall, W. B., 116 McElroy, W. D., 160, 329 McFarlane, A. S., 238 Macfarlane, M. G., 178, 179 McGuire, J. M., 85 Machacek, J. E., 115 Machlis, L., 164 McIntyre, R., 331 McKay, D. G., 94 Mackay, M., 9, 14, 15

McKee, A. P., 182 Mackenzie, E. F., 179 McKinney, G. R., 4 McKinney, R. E., 226 McLaughlan, J. M., 143 McLaughlin, C. B., 175 McLaughlin, J. J. A., 204 MacLennan, J. D., 178, 179, 199 McLeod, J. W., 175 MacLeod, R. A., 159, 164. 285, 286, 296 Mc Manus, J. F. A., 226 MacQuarrie, M. J., 179 McRorie, R. A., 147, 343 McVay, L. F., 184 McVay, L. V., 105 McVeigh, I., 164 Magasanik, B., 150, 283, 335 Mager, J., 158, 164 Maiskii, I. N., 54 Maitland, H. B., 15 Makarovskaia, L. N., 60 Malaga-Alba, A., 371, 372, 381, 382, 383 Mallett, G. E., 269 Mallette, M. F., 329 Malm, M., 280 Mamaeva, E. A., 66 Manago, M. G., see Grunberg-Manago, M. Mandia, J. W., 177 Mangalo, R., 178 Mangenot, F., 131 Mann, S. O., 299 Manners, D. J., 276, 299, 300 Maral, R., 7 Marchenko, N. K., 59 Marchionatto, J. B., 126 Marcus, S., 10, 11, 101 Marennikova, S. S., 59 Margreiter, H., 107, 108 Markenson, J., 331 Markov, V. N., 56 Markova, E. A., 52 Marks, P. A., 276 Marmorek, A., 110 Marmur, J., 281 Marquet, M., 276 Marsh, C. A., 298 Marshall, C. R., 132, 133 Marshall, J. D., 182 Marshall, R. O., 337, 338 Martin, E. R., see Rivera Martin, E. Martin, S. M., 277, 289 Martin, S. P., 4 Martin, W. J., 103, 108 Masak, E., Jr., 297 Maslovchuk, E. P., 64 Mason, K. E., 4 Mason, R. C., 102 Masselin, J., 372, 375 Mastiukova, I. N., 50 Mathias, A. P., 143 Mathieson, M. J., 150, 336

Matsushiro, A., 339 Matthews, R. E. F., 240 Mattman, L. H., 182 Mattman, L. H., 162 Mattoon, J. K., 296 Mauerman, O. E., 66 Maung, K., 299 Maxted, W. R., 229 May, A. J., 5 Mayeda, M., 298, 299 Mayr, A., 246 Meade, R. H., 97 Medvedeva, N. N., 64 Meinhart, J. O., 151, 153, 342 Meisel-Mikofajczyk, F., 178 Meister, A., 329, 332 Meklenburtseva, T. A., 62 Mela, P., 341 Meleney, F. L., 109 Melikova, E. N., 72 Melnick, J. L., 238, 239, 245 Melville, D. B., 146 Menkin, V., 361 Menolasino, N. J., 268 Menzies, G. C., 385, 389 Mercer, W. A., 177 Merchant, D. J., 179 Meredith, C. H., 130 Merrifield, R. B., 153 Merrill, E. R., 101, 102 Merson, G., 32 Mextaxas, M. A., 331 Metivier, H. V. M., 372, 375, 376, 377 Metz, C. B., 308 Meyer-Burgdorff, H., 181 Meyer, E., 216 Meyer, H. Z. H., see Horst-Meyer, H. Z. Meyer, K., 225, 354 Meyer, K. F., 7, 182, 216 Meyer, M., 98 Michaelson, M. E., 134 Michaill, C., 256, 257 Michener, H. D., 183 Mickle, H., 227 Middlebrook, G., 96, 98, 145 Mielke, J. L., 123 Miescher, G., 361 Migone, L. E., 375 Mika, L., 14 Mikhailova, A. I., 65 Mikołajczyk, F. M., see Meisel-Mikołajczyk, F. Miles, A. A., 1, 5, 9, 14, 15, 230 Miles, E. M., 14 Milhaud, G., 281 Miller, A., 153 Miller, C. A., 196, 197, 198, 201 Miller, C. P., 10, 101 Miller, G. S., 371 Miller, J. M., 108 Miller, O. N., 143 Miller, P. A., 160, 179, 183, 336 Miller, W. R., 156

Millet, J., 217 Millman, I., 287 Mills, R. E., 339 Minaev, A. V., 71 Miner, R. W., 394 Minervin, S. M., 64 Mingioli, E. S., 151, 333, 334 Minor, F. W., 299 Minsavage, E. J., 262 Mishra, J. N., 354 Mitchell, H. K., 149, 158, 333 Mitchell, J. C., 241 Mitchell, M. B., 333 Mitchell, P., 231 Mitchell, R. B., 4 Mitchison, D. A., 109 Mitel'man, P. M., 72 Mitina, T. V., 72 Mitina, V. S., 55 Mitoma, C., 150, 344 Mitsuhashi, S., 151 Moat, A. G., 161 Model', L. M., 55 Moewus, F., 308, 313 Mohan, R. R., 292 Mohler, D. N., 105 Moinuddin, M., 143 Moldavskaia, E. A., 68 Moldavskii, G. I. S., see Svet-Moldavskii, G. I. Molland, J., 175 Moller, V., 330 Mollin, D. L., 204 Molnar, D. M., 332 Moloney, P. J., 179 Monaenkov, A. M., 71 Mondo, J., 353, 354 Monsour, V., 151 Montgomery, M. M., 102, 103 Montoya, E., 282 Moore, A. M., 155, 345 Moore, D. H., 239, 245 Moore, V., 14 Moore, W. B., 164 Moos, W. S., 15 Moreau, F., 116 Moreau, Mme., 116 Morgan, C., 239, 245 Morgan, W. T. J., 230, 298 Morgunov, I. N., 72 Mori, N., 254 Moritz, A., 13 Morowitz, H. J., 270 Morozov, M. A., 72 Morozova, E. S., 70 Morozova, M. I., 69 Morris, A. J., 105 Morris, E. J., 164 Morris, M., 263 Morse, P. Z., 96 Morse, R. E., 179 Morse, W. C., 96 Mortenson, L. E., 283 Morton, D. J., 135 Morton, H. E., 151, 265 Moseley, O., 148

Moses, F. E., 298, 299 Moses, V., 286, 292 Moshen, J. R., see Redlich-Moshen, J. Moskvicheva, N. V., 65 Mosley, V. M., 263, 265, 268 Moss, G. W. O., 179 Mou, T., 3, 102 Moulder, J. W., 92 Moulton, J. E., 387 Moxon, A. L., 159 Mucciolo, P., 164 Mudd, S., 214, 220, 227, 254, 263 Mueller, H., 230 Mueller, J. H., 160, 179, 183 Munch-Petersen, A., 298 Murayama, M., 14 Murdoch, J. M., 98, 99 Murnane, T. G., 386 Murphy, R., 101 Murray, R. G. E., 227, 257, 260, 262 Muschenheim, C., 97 Musso, E., 15 Muzhenkova, N. P., 63 Myers, J. W., 165 Myrback, K., 297 Myrvik, Q., 14 Mysheva, A. S., 59

### N

Nabatov, P. I., 62 Nadel, E., 2 Naef-Roth, St., 356, 357, 361, 362, 363, 364 Nagler, F. P. O., 238, 241 Nakada, D., 339 Nakajima, E., 125 Nakhimson, L. I., 67 Nanney, D. L., 320, 321 Narrod, S. A., 333 Nartsissov, N. V., 63 Naschke, M. D., 278, 290, 292 Naseman, T., 238 Nathan, H. A., 154, 157, 207 Nativelle, R., 173, 174 Naylor, H. B., 164 Nechaeva, N. B., 52 Neckel, I., 255 Neel, H. B., 182 Neely, C., 34 Neely, W. B., 296 Neidle, A., 153 Neill, J. M., 214 Neish, A. C., 279, 280, 290 Nekhotenova, E. I., 65 Nekliudova, L. I., 70 Nelson, E., 12 Nelson, F. E., 331 Nelson, J. B., 247 Nelson, R. R., 128 Nelson, T. L., 110 Nepomniashcha, M. L., 56 Nesterova, A. M., 53 Nesvad'ba, V. V., 58

Nette, I. T., 60 Neufeld, F., 214 Neumayr, R. B., 96 Neveu, T., 15 Newburgh, R. W., 284 Newcomb, M. D., 164 Newton, A., 182, 183 Nichol, C. A., 144, 145, 289 Nichols, D. R., 108 Nickerson, W. J., 134, 135 Niemann, E., 135 Nienstaedt, H., 356 Nigg, C., 179 Nikiforov, G. S., 53 Nikolau, S. S., 63 Nishimoto, J. T., 164 Nishino, K., 226, 227, 231, 233, 265, 266 Nisman, B., 342 Niven, C. F., Jr., 156, 164 295 Niven, J. S. F., 5 Nobel, E. K., see Klieneberger-Nobel, E. Noble, E. P., 292 Noel, E., 27, 29, 30, 31, 32, 36, 43 Noland, J. L., 158 Nordberg, B. K., 263 Norman, A., 177, 260 Norman, A. G., 180 Norris, M. E., 159, 164 North, E. A., 241 Nossal, P. M., 293 Novak, M., 163 Novelli, A., 226 Novelli, G. D., 289 Novicky, R., 375, 376 Nungester, W. J., 14 Nuomiyama, K., 255 Nurmikko, V., 165

### 0

Oakley, C. L., 178, 181, 182
O'Barr, J. S., 150, 344
O'Brien, R. T., 183
Obukhova, V. R., 64
Ochoa, S., 294
Oehler, R., 205
Ogur, M., 286
O'Hea, A. J., 351
O'Kane, D. J., 275-306; 194, 289
Olcott, H. S., 183
Oleinkova, E. A., 72
Oleson, J. J., 205
Oiltzki, A. L., 331
Olivard, J., 142
Olive, E. W., 45, 46
Olivo, R., 262
Olsuf'ev, N. G., 61, 69
O'Neal, R., 296
Onisi, M., 256
Onofrey, E., 159, 164
Oparin, A. L., 57
Ordal, E. J., 288

Orland, F., 6
Orr, J. H., 174, 182
Ortenzi, R., 244
Ory, R. L., 148
Osborne, J. C., 159, 164, 165
Osipova, P. V., 66
Osipovskii, A. L., 64
Oskay, J. J., 265
Ostenhof, O. H., see Hoffmann-Ostenhof, O.
Osteraas, A. J., 115, 134
Österling, S., 181
Ostertag, H., 180
Ostryi, O. L., 71
Owen, P. C., 363
Owens, F. J., 181

#### p

Pack, R. L., 97, 107 Packer, L., 288 Paege, L. M., 279 Paffenbarger, R. S., 8 Pafnut'eva, G. V., 68 Painter, H. A., 296 Palant, B. L., 56, 72 Palen, M. I., 268 Palmer, J. W., 225 Panja, G., 179 Pankova, I. V., 55 Pankova, I. V., 33 Panos, C., 156 Papavassilou, I., 256, 257 Papazian, H. P., 393 Pappenheimer, A. J., 178 Pardee, A. B., 330 Parfentjev, I. A., 14
Parker, C. A., 175
Parker, L., 206
Parker, R. B., 154
Parks, R. E., Jr., 194, 195, 200 Parry, E. W., 179 Parvis, D., 262 Pasichnik, A. M., 53 Pasieka, A. E., 339 Pasricha, C. L., 179 Patel, M. D., 291 Paterson, P. Y., 102 Paton, D., 34 Patterson, E. L., 157, 161, 194 Patterson, R. W., 179 Paulissen, L. I., 13 Pautard, F., 299 Pavlov, P., 66 Pavlovskii, G. T., 53 Pawan, J. L., 371, 372, 374, 375, 376, 377, 378, 379, 380 Pawan, T. L., 377 Payne, F. E., 7 Payne, F. M., 110 Payne, J. I., 256, 263 Payne, W. J., 299 Pazur, J. H., 297 Peach, M., 118 Pearce, L., 247 Pearce, T. W., 175

Peat, S., 299 Péaud-Lenoel, C., 296 Peck, H. D., Jr., 287, 288 Pedagno, C. F., 202 Pedersen, H. O., 182 Pelton, R. B., 158 Peluffo, C. A., 267 Pena, R., 375 Penasse, L., 342 Pendlington, S., 161 Penfold, W. J., 179 Pennington, D., 226 Pensky, J., 179 Pepper, R. E., 175 Peretts, L. G., 55 Peri, B. A.,178 Perry, J. J., 344 Perry, W. D., 105 Pershin, G. N., 58, 59 Person, L. G., 117 Pervushina, L. A., 65, 72 Pesch, B. B., 104 Peshkovskii, G. V., 71 Peters, D., 238, 256 Petersen, A. M., see Munch-Petersen, A. Petersen, O. L., see Lennert-Petersen, O. Peterson, J. C., 179 Peterson, R., 154 Peterson, R. E., 199 Peterson, W. H., 177 Peteuly, F., 164 Petrak, F., 123 Petronio, J. J., 108 Phaff, H. J., 354 Phares, E. F., 295 Phillips, B. P., 6, 208 Phillips, J. H., 9 Piéchaud, M., 256 Piekarski, G., 257 Pierard, A., 330 Pierce, J. V., 194 Pierce, W. A., Jr., 264, 285 Pierpoint, W. S., 143 Pierson, C. F., 354, 358 Pijper, A., 228, 230, 268, 269 Pikula, D., 103 Pilipenko, V. G., 61, 69 Pillemer, L., 12, 13, 178, 179 Pinter, I. J., 204 Pirie, N. W., 230, 363, 364 Pirson, A., 164 Pittenger, T. H., 398 Planel'es, K. K., 61 Plant, W. J., 161 Pletsityi, D. F., 71, 72 Pochon, J., 177, 180 Pocock, M. A., 310 Poe, C. F., 162 Pogorel'skaia, S. A., 55 Polevitzky, K., 227 Poliakova, A. M., 69 Polin, A. N., 60 Pollack, A. D., 11 Polson, A., 178, 179 Ponomareva, N. A., 65

Ponomareva, T. N., 61 Pontecorvo, G., 393-400; 393, 395, 396, 397, 399 Pope, H., 332 Popenenkova, Z. A., 55 Popov, 56 Porter, C. L., 129 Porter, J. W. G., 143 Porter, K. R., 12 Poske, R. M., 102, 103 Postgate, J. R., 294 Potapchik, I. A., 69 Potel, J., 4 Potter, L. F., 180 Potts, G., 23, 27 Powell, E. O., 175 Powell, H. M., 85 Powers, J. J., 179 Powling, H. F., 104 Prescott, J. M., 161, 164, Prestidge, L. S., 330 Prévot, A. R., 173, 174, 175, 176, 177, 179, 182, 184, 269 Price, K. M., 263 Prieur, P., 291 Prince, H. N., 159, 164 Pringsheim, E. G., 227 Pringshelm, E. G., 22 Priselkov, M. M., 68 Pritchard, R. H., 395, 396 Proom, H., 164 Proskurnikova, T. A., 358 Protsenko, A. E., 53 Provasoli, L., 195, 203, 204, 205 Prowse, G. A., 117 Prusoff, W. H., 163 Pulaski, E. J., 182, 183 Puleston, H. S., 162 Purcell, E. M., 107

Quackenbush, F. W., 358 Quintanilha, A., 393 Quiroga, S., 372, 375

### R

Rabaeva, M. I., 57
Rabin, R., 160
Rabotnova, I. L., 57
Racker, E., 155, 275, 276, 277, 344
Radin, N. S., 141, 331
Rafelson, M. E., Jr., 151
Raffel, S., 5
Rafyl, A., 179
Rainbow, C., 164
Rake, G., 238, 240, 245
Rakosky, J., Jr., 345
Ram, T., 1
Ramakrishnan, C. V., 277, 293
Rammelkamp, C. H., Jr., 105

Rantz, L. A., 94 Rao, M. R. R., 196, 197, 198 Rao, N. S. S., see Subra Rao, N. S. Rao, R. S., 244 Raper, J. R., 129, 134, 393 Raper, K. B., 21, 22, 23, 24, 27, 28, 29, 33, 34, 35, 36, 45, 46, 47, 48, 206, 399 Raphael, J. C., 201 Rapport, M. M., 354 Rassfeld, L., 173, 182 Ravel, J. M., 145, 146, 158, 162 Rawson, L. E., 7 Ray, D. L., 45 Raybaud, L., 121 Raynaud, M., 177, 178, 179, 180 Reagan, M. A., 97, 107 Reagan, R. L., 383 Reames, H. R., 179 Record, B. R., 298 Reddi, K. K., 148 Redlich-Moshen, J., 12 Redmond, D. R., 136 Reed, G. B., 174, 177, 182, 289 Reed, L. J., 194, 295 Reedy, R. J., 92, 183 Rees, C. W., 6 Rees, E. G., 92 Rees, R. J. W., 6 Reese, E. T., 355 Regamey, R. H., 179 Regan, M. A., 194 Reger, J. L., 162 Regna, P. P., 108 Rehaag, H., 373, 374 Reich, K., 205 Reichard, D. H., 183 Reichard, P., 155, 338, 339 Reichenow, E., 310 Reimann, H. A., 88 Reinié, L., 239 Reiss, O., 336 Reissig, M., 239 Remlinger, P., 369 Repaske, R., 286 Ressler, C., 153 Reusser, P., 356, 362, 364 Reyniers, J. A., 6 Reynolds, E. S., 155 Rhodes, A. J., 240 Rice, C. E., 179 Richards, W. A., 108 Riedmüller, L., 356 Rinker, J. N., 269 Riss, E., 108 Ritchie, J. L., 279 Rittenberg, S. C., 163, 295 Ritter, G. J., 177 Rivera Martin, E., 372 Rivers, T. M., 239, 240, 241 Roantree, R. J., 94 Roberts, R. B., 329

Randall, W. A., 92, 108, 183

Robbins, K. C., 178 Robbins, W. J., 164, 203 Robertis, E. de, 239 Roberts, E., 1, 333 Robertson, H. E., 286 Robertson, M. 179 Ryley, J. F., 290, 300 Ryley, C. F., 227, 238, 254, Ryley, V. L., 53 Robinson, A., 98 Robinson, H. J., 102 Rodriguez, E., 154 Røed, H., 127 Roelofsen, P. A., 355 Roessler, W. G., 162 Roger, H., 214 Rogers, C. G., 143 Rogers, H. J., 299 Rogers, L. L., 158 Roine, P., 156 Romani, J. D., 12 Romankova, A. G., 59 Rooyen, C. E. van, 237, 238, 240 Roper, J. A., 393, 394, 395, 396, 397 Rosahn, P. D., 247 Rose, C. S., 156, 157, 163, 297 Rose, H. M., 239, 245 Rose, I. A., 294 Rosebury, T., 183 Roseman, S., 298, 299 Rosenbaum, H. B., 88, 108 Rosenbush, M., 375 Roslansky, P. F., 165 Ross, G. I. M., 204 Ross, H. W., 178 Ross, O. A., 12, 13 Ross, R. S., 94 Rossetti, V., 135 Rossi, A. L. B., see Briceno Rossi, A. L. Rostock, O., 260 Rostock, P., 182 Roth, F. B., 178 Roth, St. N., see Naef-Roth, St. Rothstein, A., 356, 361 Rottgart, A., 372, 375 Routien, J. B., 106 Rowell, J. B., 127 Rowen, J. W., 260 Rowen, M., 15 Rowley, D., 13 Ruban, E. L., 61 Rubashkina, B. K., 55 Rubin, B. A., 358 Rubin, V. I., 55 Rubinstein, D., 4 Rudzinska, M. A., 202 Ruger, M., 97, 107 Ruml, D., 10 Runov, E. V., 60 Runyon, E. H., 27 Rusch, H. P., 32, 36 Ruska, E., 238

Ruska, H., 238, 255

Russe, H., 97 Russell, E. S., 1 Rustigan, R., 182 Ruth, H., 10 Ryan, F. J., 164

S

Saarenmaa, E., 182 Sable, H. Z., 277 Sacasco, R., 372, 375 Sadasivan, T. S., 131 Sadler, W. W., 387 Sager, R., 307, 309 Sagers, R. D., 288 St. Phalle, M. de, 161 Saissac, R., 179, 180 Sakaguchi, K., 339 Salagova, T. A., 70 Salaman, M. H., 241 Salikini, V., 156 Salklawska-Szymonowa, O., 332 Salton, M. R. J., 223, 226, 227, 229, 265, 267 Saltza, M. H. von, 157 Sames, R. W., 178 Samson, F. E., 294 Sanborn, C. C., 370 Sandage, C., 8, 13 Sanders, A. C., 178 Sanders, A. G., 96 Sanders, F. K., 239 Sandine, W. E., 159 Sandler, A., 88 Sanford, G. B., 129 San Pietro, A., 345 Santer, M., 15, 263, 284, 285 Sanwal, B. D., 358, 359, 361 Sappenfield, R. W., 110 Saraswathi-Devi, L., 160 Sardinas, J. L., 107 Saroja, K., 297 Sartwell, P. E., 177 Saslaw, S., 2 Satina, S., 120, 127 Satti, M. H., 246 Sauer, L. W., 179 Savage, N., 228, 268, 269 Savastano, G., 115, 133, 134 Savel'vol'f, G. B., 54, 66 Savin, V. R., 64 Saz, A. K., 85, 89, 109 Saz, H. J., 290 Scanga, F., 253 Scatterday, J. E., 383, 384 Schaberg, A., 89 Schaefer, J., 2 Schaefer, W. B. 145 Schaffner, G., 361 Schambye, P., 280 Schatz, A., 195, 292 Schechmeister, I. L., 13, 14 Scheffer, R. P., 357, 358, 362 Scheibel, I., 179

Schellenberg, H., 262 Schenberg, M., 13 Schepartz, S. A., 296 Scher, W. I., Jr., 332 Scheuber, J. R., 179 Schlenk, F., 147, 343 Schlesinger, R. W., 239 Schlüchterer, E., 298 Schmid, R., 357 Schmidt, W. C., 229 Schneider, L. K., 164 Schnieder, N. J., 384 Schneider, P., 9, 14 Schneller, M., 321 Schoeller, M., 158 Schoenbach, E. B., 108 Schönfeld, J. K., 241 Schroeder, C. R., 380, 383 Schuler, R., 258 Schuster, G., 255 Schutter, J., 291 Schutz, F., 181 Schütze, H., 216 Schwarte, L. H., 243, 244, 369 Schwartz, B., 116 Schweet, R. S., 344 Schweinburg, F. B., 13, 101 Scott, G. D., 238 Seaman, A., 7 Seaman, G. R., 193, 195, 206, 278, 290, 292 Seastone, C. V., 263 Second, L., 179 Seeley, H. W., 159 Segre, A., 147 Séguin, P., 173 Seibles, T. S., 283 Seidler, E., 364 Seigel, J. M., 285 Selye, H., 6 Sempio, C., 357, 363, 364 Sermonti, G., 393, 394, 395, 397 Sermonti, I. S., see Spada-Sermonti, L Seshachar, B. R., 320 Sevag, M. G., 109, 154, 345 Severens, J., 1 Severi, R., 256 Shaffer, B. M., 27, 28 Shankar, K., 175, 285 Shanks, P. L., 243 Shapiro, S. K., 147, 343 Shatrov, I. I., 70 Shaw, M., 352 Shawe, G. D. H., 92 Shcheglova, A. S., 55 Shcherbakova, L. I., 59 Shearer, A. R., 182 Shedlovsky, T., 240 Shel'piakova, V. P., 59 Shen, S. C., 117 Shepard, C. C., 5 Sheperd, A. D., 364 Sher, I. H., 329

Sherman, R., 179

Shifrin, I. A., 62 Shilo, M., 8, 13 Shimura, K., 342 Shinohara, C., 255 Shiota, T., 148 Shirakawa, H. S., 164 Shirk, H. G., 299 Shive, W., 145, 146, 147, 158, 161, 162, 361 Shkol'nikova, L. A., 53 Shooter, R. A., 92 Shope, R. E., 243, 244 Shorb, M. S., 156 Shtern, E. A., 54 Shubladze, A. K., 62, 63 Shull, G. M., 107 Shul'man, E. A., 70 Shumakova, G. V., 71 Shunk, C. H., 163 Shur-Shul'ts, V. M., 53 Shwachman, H., 95 Siang, W. N., 117 Siddiqui, I. R., 299 Siemienski, J., 101 Sigel, M., 8 Sih, C. J., 297 Sijpesteijn, A. K., 180 Sil'chenko, T. S., 62, 68 Silverman, M., 145 Silverman, M. S., 13 Simagina, V. A., 69 Simmonds, S., 151, 153, 199, Simon, K., 179 Simpson, C. F., 122 Simpson, F. J., 278, 279 Singh, B., 109 Singh, B. N., 22, 23, 24, 45, 46, 47, 48 Sinnhuber, R. O., 160 Sistrom, D. E., 164 Siu, R. G., 355, 356 Sjöstrand, F. S., 254, 263 Skarnes, R. C., 16 Skavlem, J. H., 95 Skavronskaia, A. G., 55 Skeggs, H. R., 155, 163 Skerman, V. B. D., 174 Skinner, C. G., 147, 161 Skliarova, N. N., 66 Skriabin, G. K., 59 Skupienski, F. X., 23, 42 Slade, H. D., 153 Slade, S. E., 97 Slagg, C. M., 121 Slamp, W. C., 153 Slanetz, C. A., 100 Slater, E. C., 287 Slater, J. V., 195 Slein, M. W., 277 Slepushkin, A. N., 70 Slifkin, M., 34, 36 Slotnick, I. J., 154, 163, 345 Slutskovskaia, L. S., 66 Smadel, J. E., 102, 238, 239, 240 Small, J., 356

Smiley, K. L., 161 Smirnova, M. V., 58 Smirnova, V. A., 53 Smit, A. M., 241 Smith, A. A., 285 Smith, A. L., 102 Smith, C. E., 108 Smith, D. T., 108 Smith, E., 14 Smith, F., 10 Smith, H., 7, 8, 13, 90 Smith, I. W., 269 Smith, J., 160 Smith, J. D., 240 Smith, J. G., 108 Smith, J. W., 85 Smith, L. DS., 173, 174, 177, 178, 179, 180, 182, 183 Smith, L. H., 338, 339 Smith, M. E., 181 Smith, N. R., 23, 206 Smith, P. F., 151, 159, 164 Smith, P. N., 156, 157, 297 Smith, P. W. H., see Harris-Smith, P. W. Smith, R. A., 278 Smith, R. E., 123 Smith, R. H., 214 Smith, R. T., 2, 7, 11 Smith, W., 10, 240 Smith, W., 10, 240 Smithies, W. R., 264 Smoot, J. S., 165 Smyrniotis, P. Z., 276 Sneath, P. H. A., 158 Snell, E. E., 141, 142, 143, 150, 153, 161, 194, 331, 342 Snoke, J. E., 343, 344 Snyder, H. E., 179 Sobolev, N. M., 61 Sobotka, H., 144 Sokatch, J. T., 280 Sokolova, N. M., 53 Soltys, M. A., 177 Somm, H., 164 Sommer, H., 216 Somova, A. G., 54 Sonneborn, T. M., 320, 321 Sorokin, I. I., 60 Sosov, R. F., 54 Souza, M. A. de, see Alves de Souza, M. Spada-Sermonti, I., 393 Speck, M. L., 147, 159, 343 Speck, R. S., 101 Spector, R. S., 101 Spector, L., 337, 338 Spencer, M. C., 178, 183 Sperry, C. G., 389 Spicer, D. S., 155 Spilman, W., 353 Spirin, A. S., 55 Spooner, E. T. C., 230 Spray, R. S., 174, 177 Sprince, H., 201, 207 Sprinson, D. B., 151, 290 Sprunt, D. H., 105, 184 Sreenivasan, A., 162 Srere, P. A., 276

Srinivasan, P. R., 151, 290 Stacey, M., 230, 296, 298, 299 Stadtman, E. R., 294, 344 Stafford, E. S., 179 Stähelin, H., 231 Stahmann, M. A., 351, 356, 357, 358 Stanley, J. L., 8, 13 Stannard, C., 239 Stark, O. K., 8, 13 Staroverova, A. G., 65 Starr, R. C., 310, 325 Stebbins, M. E., 203 Steel, R., 289, 293 Steele, R. H., 285 Steers, E., 155 Stein, G., 178 Steinberg, A., 225 Steinkraus, K. H., 175 Stempen, H., 265 Stephenson, M., 354 Sterbenz, F. J., 202 Stern, C., 395 Stern, T. N., 105 Sterne, M., 178, 179 Stetson, C., 11 Stetson, C. A., 105 Stevens, C. M., 158, 331 Stevens, K. M., 100 Stewart, B. T., 333 Stewart, C. J., 143 Stewart, S. E., 179 Still, J. L., 287, 293 Stille, B., 257 Stjernholm, R., 281 Stock, A. H., 182 Stoeckenius, W., 238 Stokes, F. N., 283 Stokstad, E. L. R., 157, 161, 194, 203 Stoll, C., 358, 360 Stollerman, G. H., 105 Stolzer, B. L., 105 Stone, D., 199 Stone, J. D., 241 Stone, J. L., 179 Stone, L., 161 Stoppani, A. O. M., 289 Stoppelman, M. R. H., 95 Storm, J., 204, 205 Stosch, H. A. von, 322 Stowell, E. A., 121 Strassman, M., 151, 336 Strauss, B. S., 293 Strauss, M. J., 238, 239, 245 Strawitz, J. G., 182, 183 Strecker, H. J., 285, 341 Street, R. B., 93 Streshinskii, M. O., 53 Strickland, S. C., 143 Striebich, M. J., 278 Stringer, C. S., 296 Strom, J., 109 Strong, F. M., 143 Stroube, W. H., 135 Stroud, A. N., 13 Stutts, A. L., 164

Styk. B., 63 Subrahmanyan, R., 322, 323, Subramanian, D., 359 Subra Rao, N. S., 359 Sugiyama, H., 181 Sukhov, K. S., 53, 56 Sulkin, S. E., 383 Sullivan, T., 385 Sulzer, F., 164 Sumarokov, A. A., 72 Suminae, K., 125 Summers, M. M., 13 Summers, P. W., 14 Surgalla, M. J., 94 Surina, N. S., 69 Sussman, M., 21-50; 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 47, 135, 206 Sussman, R. R., 21, 37, 45 Sutherland, G. L., 161 Sutton, R. M., 269 Sutton, W. B., 278 Suzuki, O., 260 Suzuki, S., 241 Svet-Moldavskii, G. I., 63 Swanson, B. K., 205 Swartz, H. E., 164 Sweeris, S., 355 Swim, H. E., 288, 290 Syrett, P. J., 286 Szongott, H., 215, 217 Szybalska, M. E. H., see Hunter-Szybalska, M. E. Szybalski, W., 262 Szymonowa, M., 332 Szymonowa, O. S., see Salklawska-Szymonowa, O.

T

Tabor, H., 335 Tagaya, I., 241 Taha, S. M., 177 Takahara, S., 2 Takahashi, H., 339 Takaishi, K., 226, 227, 231, 233, 265, 266 Takeya, K., 255 Taliaferro, W. H., 116 Talmage, D. W., 9 Tamm, I., 12 Tanaka, S., 226, 227, 230, 231, 233, 265, 266 Tanner, F. W., 179 Tanner, F. W., Jr., 108 Taraniuk, Z. E., 53, 54 Tarantola, V., 202 Tarasevich, I. V., 62 Tardieux, P., 174, 178 Tarkhanova, I. O., 69 Tarr Gloor, E., 393, 395, 397 Tarver, H., 343 Tataki, H., 177 Tatum, E. L., 151, 196, 336

Taubeneck, U., 265 Tausig, F., 156 Taylor, C. E. D., 8 Taylor, H., 216 Taylor, W. I., 183 Tchan, Y. T., 177 Tebiakina, A. E., 59 Tefankjian, H., 321 Tegawa, J., 230, 266 Tegawa, S., 227, 233 Teillon, J., 342 Teixeira, J. de C., 241, 245 Teltscher, H., 148 Tepper, J., 179 Teramoto, K., 178 Terekhova, L. G., 72 Tevilevich, M. B., 56 Thatcher, F. S., 356, 361, 362 Thaxter, R. T., 121 Thévenard, A., 182 ., 134 Thimann, K. V Thjötta, T., 184 Thoai, N. V., 339 Thom, C., 23, 27, 28, 45, 47 Thomas, A. J., 151, 336 Thomas, C. G., 182 Thomas, J. L., 164 Thomas, L., 2, 7, 10, 11, 102, 103 Thompson, C. C., 289 Thompson, J. C., 196 Thompson, P. E., 205, 208 Thompson, R., 225 Thorne, C. B., 329-50; 332, 340 Thorold, P., 179 Thorsell, W., 263 Thouvenot, H., 269 Tickner, C., 2, 3 Tiecco, G., 244 Tieghem, P. van, 46 Tikhonenko, A. S., 60 Tissières, A., 287 Titus, D. S., 183 Tjalma, R., 389 Todd, A. R., 329 Todd, E. W., 12, 13 Toennies, G., 145 Toenniessen, E., 215 Togunova, A. I., 67 Tolhurst, J. C., 179 Tomarelli, R. M., 156 Tomcsik, J., 213-36; 214, 215, 216, 217, 218, 219, 220, 225, 226, 227, 230, 231, 232, 233, 263, 264, 265, 267 Tomlinson, A. H., 164 Tomlinson, N., 295, 340 Tompsett, R., 97 Tongeren, H. A. E. van, 246 Toropova, E. G., 57 Torres, C. M., 245 Torres, S., 374 Toth, E., 11 Tovarnitskii, V. I., 63

Trafton, H. M., 108 Trager, W., 208 Traisman, H. S., 106 Trapido, H., 371 Traub, A., 164 Trelawny, G. S., 292 Treschow, C., 125 Tresner, H. D., 130 Trexler, P., 6 Tribunskaia, A. I., 60 Trigub, N. I., 67 Trius, R. V., 67 Troescher, C. B., 204 Tronnier, E. A., 256 Truant, J. P., 260 Trubey, R. H., 158 Trudinger, P. A., 285 Trukhmanov, B. G., 65 Trushina-Tumanova, E. F., 66 Tsuchiya, H. M., 296 Tsvetkova, E. M., 69 Tubaki, K., 130 Tucker, W. H., 179 Tuffery, A. A., 260 Tuffrau, M., 321 Tuisheva, R. M., 63 Tuite, J. F., 132, 133 Tulasne, R., 260 Tul' chinskaia, V. P., 72 Tulczynska, R. E., see Etinger-Tulczynska, R. Tulloch, W. J., 182 Tumanova, E. F. T., see Trushina-Tumanova, E. F. Turel, F., 359 Turner, A. W., 179 Turner, T. B., 179 Turpin, A., 178 Tveit, M., 129 Twiehaus, M. J., 184 Twort, D. N., 184 Tyler, A., 34 Tyler, D. B., 4 Tytell, A. A., 179 Tytell, A. G., 179

U

Uchida, T., 255 Udenfriend, S., 344 Ullstrup, A. J., 358 Ulrich, F. W., 375, 377, 378, 379 Ulrich, J. A., 175 Umbarger, H. E., 151 Umbreit, W. W., 330 Upton, E., 2 Uritani, I., 363 Urteaga, O., 256, 264 Usdin, E., 145 Usmanova, S. I., 65 Uspenskaia, T. A., 61 Uvarov, A. A., 56

V

Vager, P. M., 59

Vajda, G. Y., 11 Valee, B. L., 278 Valentik, K. A., 155 Vallée, A., 244 Vallet, L., 240 Vanag, A. I., 70 Vandamme, J., 284 Van Demark, P. J., 280 van der Walt, J. P., see Walt, J. P. van der van Drimmelen, G. C., see Drimmelen, G. C. van van Heyningen, W. E., see Heyningen, W. E. van van Iterson, W., see Iterson, W. van van Rooyen, C. E., see Rooyen, C. E. van van Tieghem, P., see Tieghem, P. van van Tongeren, H. A. E., see Tongeren, H. A. E. van van Wagtendonk, W. J., see Wagtendonk, W. J. van Vasil'eva, L. V., 62, 69 Vaughn, R. H., 175, 177 Vavra, J. J., 296 Veltre, F. A., 156 Vely, V. G., 287 Vendrely, C., 260 Venkataraman, R., 297 Venters, H. D., 383, 384 Verezhnikov, N. N. Z., see Zhukov-Verezhnikov, N. N. Verkholomov, E. E., 62 Verlinde, J. D., 246 Victor, J., 11 Vieuchange, J., 241 Vigneaud, V. du, 153 Vilter, R. W., 95 Vinet, G., 179 Virat, B., 244 Virtanen, A. I., 330 Viscontini, M., 158 Vishniac, H. S., 164, 198 Vishniac, W., 285, 288 Visser, D. W., 163 Vittorio, P. V., 289 Vizir, P. E., 53 Vogel, H. J., 150, 151, 332, 333, 334, 341 Vohra, P., 158 Voinovskaia, K. K., 58 Volcani, B. E., 284 Volchok, A. K., 58 Voluiskaia, E. N., 63 von Borries, B., see Borries, B. von von Hibler, W., see Hibler, W. von von Korff, R., see Korff, R. von Von Oettingen, W. F., 87 von Saltza, M. H., see Saltza, M. H. von von Stosch, H. A., see Stosch, H. A. von

Voroblev, A. A., 65 Vygodchikov, G. V., 70 Vyshnevitskaia, L. K., 63

Wachsman, J. T., 335, 340 Waelsch, H., 153, 285 Waggoner, P. E., 358, 359 Wagner, H. N., Jr., 94 Wagner, M., 6 Wagner, R. P., 151 Wagtendonk, W. J. van, 196, 197, 198, 203 Wahle, G. H., 94 Waisbren, B. A., 108, 109 Waksman, S. A., 129 Waley, S. G., 341 Walker, C., 13 Walker, C. J., 354 Walker, D. L., 7 Walker, J. B., 161 Walker, J. C., 351, 355, 356, 357, 358, 362 Walker, T. K., 283 Walkley, V. T., 132, 133 Wall, J., 156 Wallach, D. P., 337, 338, 339 Wallick, H., 97, 107 Wallin, D. G., 105 Walt, J. P. van der, 228 Walton, K. W., 8 Walton, R. B., 156 Wang, C. H., 150, 151, 292, 341 Wantz, M., 179 Warburg, O., 363 Ward, G. B., 143 Ward, R. B., 299 Ward, S. M., 241 Wardlaw, A. C., 12, 13 Ware, G. C., 296 Warrack, G. H., 178, 181 Warren, G., 233 Warren, G. H., 267, 298 Warren, J. R., 126 Wasserman, A. E., 283 Wasserman, R. H., 159 Watanabe, Y., 342 Waters, G. G., 179 Waterworth, P. M., 164 Watson, D. W., 16, 178 Watson, K. C., 101 Watson, S. W., 198 Webb, M., 145, 225, 255, 256 Webb, R. B., 256, 257, 258, 260, 263 Weber, M. M., 206 Webley, D. M., 295 Webster, M. E., 178 Wedin, D. S., 108 Weeks, O. B., 164 Weibull, C., 223, 228, 232 270 Weigle, J. J., 262 Weimberg, R., 284

Weimer, H. E., 12 Weinberg, M., 173, 174 Weindling, R., 119, 120, 121, 126, 129 Weinhouse, S., 151, 283, 336 Weinrach, R. S., 283 Weinstein, L., 87, 89, 97, 105, 106 Weir, J. R., 134 Weiser, R., 14 Weiss, U., 151 Weissbach, H., 344 Welch, A. D., 144 Welch, H., 92, 107, 183 Wellman, W. E., 183 Wendt, F., 11 Wenrich, D. H., 317 Wentzel, L. M., 178, 179 Werkman, C. H., 289 Weser, D. K., see Koch-Weser, D. Wesselhoeft, C., 8 West, E., 122 West, T. C., 8 Westley, J., 149, 335 Wetzler, T. F., 182 Wheeler, H. E., 358 Whelan, W. J., 299 Whistler, R. L., 297 Whitaker, D. R., 297, 355 White, A. G. C., 159, 264, 285 White, P. B., 230 Wnite, R. P., 355 Whiteley, H. R., 288 Whitfield, J. F., 262 Wiame, J. M., 293, 330 Widdicombe, J. G., 5 Wielgosz, G., 239 Wiener, S., 179 Wiese, A. C., 164 Wiese, L., 307, 308 Wiesendanger, S. B., 342 Wigand, R., 238, 256 Wiken, T., 164 Wilbur, W. D., 125 Wilcoxson, R. D., 128 Wildy, P., 184 Wiley, M., 182 Wilhelm, D. L., 9, 14, 15 Wilkinson, J. F., 264, 298 Williams, C. J., 179 Williams, D., 101 Williams, F. P., 9 Williams, J. H., 183, 205 Williams, O. B., 183 Williams, P. L., 156 Williams, R. C., 238, 239, 265, 267 Williams, R. J., 158, 194 Williams, V. R., 331 Williams, W. C., 179 Williams, W. J., 340 Williams, W. L., 201 Williamson, D. H., 276 Williamson, G. M., 215, 216 Willstaedt, E., 297 Wilson, A. T., 175 Wilson, C. M., 42, 43

Wilson, D., 179 Wilson, J., 289 Wilson, J. B., 179 Wilson, P. W., 283, 286, 287, 291 Wilson, T. G. G., 286 Wilson, V. O., 8 Wilt, J. C., 89 Winder, F., 286 Winfield, M. E., 288 Winstead, N. N., 355, 358 Wise, D. L., 205 Wiseman, J. S., 389 Wishart, F. O., 179, 241 Wisseman, C. L., 102 Witt, N. F., 162 Witte, E. J., 384, 385 Wolf, F. J., 97, 107 Wolfe, J. B., 295 Wolfe, P. A., 6 Wolfe, R. S., 289 Wolin, H. L., 164 Wolin, M. J., 295 Wollenweber, H. W., 124 Wolman, B., 8, 13 Wong, D. T. O., 292, 294 Wood, H. G., 275, 280, 281, 282 Wood, J. E., 179 Wood, J. P., Jr., 107 Wood, R. C., 155 Wood, R. K. S., 129, 135, 354 Wood, S., 148 Wood, W. A., 141, 276, 277, 280, 333 Wood, W. B., 101 Woodbine, M., 7 Woodburn, M., 259

Woodroofe, G. M., 243, 244 Woodruff, C. E., 238 Woodruff, H. B., 97, 107 Woods, L., 162 Woody, B. R., 277 Woolley, D. W., 153, 361 Work, E., 142, 150, 329, 330 Wrba, H., 364 Wright, B. E., 144, 341 Wright, G. P., 178, 182 Wright, L. D., 141-72; 141, 143, 146, 150, 155, 163 Wright, N. G., 342 Wright, S. S., 107 Wright, W. H., 6 Wright, W. W., 107 Wulzen, R., 198 Wurz, L., 13 Wyckoff, R. W. G., 239 Wyman, L., 179 Wynd, F. L., 363, 364 Wyss, O., 151

### Y

Yabuta, T., 360 Yaeger, R. G., 143 Yalim, F., 260 Yanari, S., 343 Yaniv, H., 151 Yanofsky, C., 290, 344 Yaphe, W., 297 Yarwood, C. E., 122, 352, 363, 364 Yashar, Y., 13 Yasunobu, K., 295 Yates, M., 353 Yoshida, N., 226, 227, 230, 231, 233, 265, 266
Yoshibara, G. M., 107
Youmans, G. P., 287
Young, A. C., Jr., 156
Young, J., 13
Yragui, M. M., 164
Yu, T. C., 160
Yuasa, A., 260
Yura, T., 151, 341

#### Z

Zähner, H., 362, 364 Zak, H. C., 289 Zakrzewski, S. F., 144, 145, 289 Zapf, K., 254 Zappasodi, P., 2, 3 Zatman, L. J., 345 Zebovitz, M. M., 92 Zeissler, J., 173, 180, 181, 182 Zeitlenok, M. A., 62 Zhak, S. P., 64 Zhdanov, V. M., 63, 67 Zhiv, B. V., 70 Zhuk, A. S., 72 Zhukova, I. G., 57 Zhukov-Verezhnikov, N. N., 54 Zhuravleva, G. M., 67 Zil'ber, L. A., 63 Zilliken, F., 156, 157, 297 Zimmerman, L. N., 160, 345 Zinnemann, K., 215, 216 Zubova, Z. F., 65 Zwartouw, H. T., 8, 13 Zworykin, N., 233

## SUBJECT INDEX

A

Acetate, synthesis of, 282 Acetate-activating reactions, 294

Acetone metabolism, by photosynthetic bacteria, 285

Acrasieae, taxonomy of, 45-47 Adenosine, cleavage of, by

spores, 345 Aeration, effect on bacterial

growth, 57
Aggregation of slime molds,
27-32
center formation and popu-

lation, 29-30 chemotaxis in, 27-28 environmental factors af-

fecting, 32 genetic control of initiation

of, 31-32 initiator cell for, 30-31 specificity of, 28-29

Aggressiveness of plant parasites and nutritional requirement

and nutritional requirements, 353

L-Alanine, role of, in spore germination, 344-45 Alcohol dehydrogenase, 278

Alcoholic fermentation, inhibition by 6-deoxy-6fluoro-D-glucose, 282

Aldolase, iron-activated, 277 2-keto-3-deoxy-6phosphogluconate, 277

Algae, reproduction of, 307-

Amino acids biosynthesis of, 147-51 reviews on, 150-51

coenzyme A derivatives of, 344

decarboxylation of, 329-30 in Escherichia coli, 55 metabolism of, 333-44 reversal of antimetabolite

inhibition by, 161-62 sulfur, metabolism of, 343-

D-Amino acids metabolism of, 331 occurrence of, 331

transamination and synthesis of, 332-33 Amino acid decarboxylases

Amino acid decarboxylases distribution in Salmonella, 329 effect of pyridoxine deficiency on, 329-30 effect of vitamin  $B_6$  on, 330 effect of vitamin  $B_6$  analogs on, 330

preparation of, 329-30 L-Amino acid oxidase, for diaminopimelic acid, 330 Amino acid requirements of

Paramecium, 197
Amoebae, nutritional requirements of, 205-6
Amoebae, parasitic, nutri-

Amoebae, parasitic, nutritional requirements of, 208-9 Amoebina, transfer of nuclei

between, 313 Amylases, 297-98 Anaerobic bacteria, 173-84 aerobic growth of, 175

antibiotic control of, 173 bacteriophages for, 178 cellulose decomposition by, 180

cultivation techniques for, 174-75 flax retting by, 180 general references on, 173-

74 hemagglutinating properties of, 177-78

in soil, 179-80 in wounds, 182 new species of, 177 nonsporulating, 183-84 pectin fermentation by, 180 taxonomy of, 174-77 toxins of, 178-79

Anaphylactic shock, antibiotic induction of, 87-88 Anisporogenesis, 313

Antagonism, and bacterial growth, 163-65 between antibiotics, 109-10

between slime molds, 39-41 Antagonistic symbiosis, 116-27

Anthranilic acid, biosynthesis of, 148 Antibiotics

activity against anaerobes, 183 antagonisms between, 109-10

as prophylactic agents, 104-6 cross reactions against, 91-

cross reactions against, 91-92 disturbance of intestinal flora by, 91 effect of adrenal steroids on, 101-3 effect of radiation on activ-

ity of, 10 effect of, on nuclei of bacteria, 262

harmful results of excessive use of, 93-94 microbial resistance to,

90-92 mode of action of, 59 new agents, 106-8

persisters against, 103-4 production of, 86 role of, in nutrition, 108

superinfection following use of, 89-90 synergistic effects between,

109-10 toxicity of, 88-89 untoward reactions to, 87-

use of combinations of, 109-

value of, in tuberculosis, 95-99

Antibodies against pox viruses, 240-41 against vaccinia virus,

241-42 as indicators for bacterial structures, 213-33 permeability of bacteria to,

213
Russian literature on, 64-65
visible effects of, on cells,
213-28

Antibody formation, role of lymphoid cells in, 64-65 Antigens, "complete" as

vaccines, 68 in cell walls of bacteria, 267

of pox viruses, 240-41 of vaccinia virus, 241-42 Russian literature on, 65-70 serological detection of

location in cell, 229-31 Antimetabolites, 161-63 Antimicrobial chemotherapy, 85-110

Apple juice, succession of fungi in, 132

Arabinose, oxidation of, 284 Arginine, biosynthesis of, 337-39

dissimilation of, 339 Aromatic compounds, biosynthesis of, 151 Aspartic acid, metabolism of, 342

Auxins, influence of, in plant diseases, 360 Avian pox, relationship with other pox viruses, 247

Bacteria anaerobic, general review

of, 173-84 cell wall of (see also cell wall), 264-67 and specific serological reactions with, 219-28 cross walls of, 259 "cytoarchitecture" of, 254 cytology of, 253-70 cytoplasmic membrane of, 265

electron microscopy of, 255 filterable forms of, 53-54 flagella of (see also flagella), 267-70

fluorescent microscopy of, 254 granules in, 254

large bodies of, and nuclear behavior, 262-63 mitotic division in, 258-60 modification of, induced by antibiotics, 55-56

modification of, induced by drugs, 55-56 nuclear fusion in, 261 nutrition of, 141-65 phase microscopy of, 254 protoplasts of, 231-33 and serological behavior,

731-33 serological reactions of components of, 228-33 slime layer of (see also slime layer), 263-64 structures of (see indivi-

dual structures) surface structures of, and antibodies as indicators for, 213-33

thermophilic, 53 transformation of species of. 55

variation of, influence of environment on, 54-55 Bacterial cell wall

effect of antibody on, 219-28 separation of, from cytoplasmic membrane, 220-28

Bacterial cytology books on, 253 reviews on, 253 Bacterial nucleus (see nucleus), 254-63 Bacterial structures

as revealed by enzymic

digestion, 226-27 effect of lysozyme on, 220-26

illustrations of, 221, 222, 224 Bacterial viruses (see phage)

Bactericidal agents, mode of action of, 59

Bacteriophage (see phage) Bats

general information concerning, 370-72 relation to rabies, 369-90 Biology of microorganisms (Russian literature on), 57-59

Biotin, 145-46 activity of derivatives of, 145

functions of, 146 microbiological assay for, 145

precursors of, 146 Botulinus toxin, inhibition of phagocytosis by, 64 Botulism, 181-82

Butraldehyde, as intermediate in butanol fermentation, 282

Canary pox, 247 Canavanine, dissimilation of, 342-43

Cancer, viral cause of, 63 Capsular material of Bacillus anthracis, 214-

16 of Bacillus megaterium, 217-18

of different bacilli, 214-19 of Hemophilus influenzae, 216-17

of Pasteurella pestis, 216 of Streptococcus hemolyticus, 216-17

presence of complexes in, 216-19 Capsular reactions, and

pseudoreactions, 219 Capsules, of bacteria (see also slime layer) 263-64

antibodies for detection of components of, 214-19 effect of antibodies on, 214-19

"fading" effect with, 219 initial stages of formation of, 218 polysaccharides of, 298

swelling of, 214-19 Carbamyl phosphate, relationship to compound X and citrulline, 337-39 Carbohydrate metabolism,

275-300 effect of various inhibitors on, 289 miscellaneous, 289-90

Carbohydrates enzymes for dissimilation of, 276-78 hydrolyases for, 297-98

metabolism of, 275-300 oxidative mechanisms for 282-85 transformations of, 298

Carbon dioxide and requirements for fatty acids, 156 exchange of, 288-89

fixation of, by Hydrogenomonas ruhlandii, 288-89

by Rhodopseudomonas capsulatus, 289 by Thiobacillus denitrificans, 285

by Thiobacillus thioparus, 285

reduction of, 52 requirements for, by bacteria, 57 Carboxylase, nitrite and

nitrate inhibition of, 58 Carboxylic acids, metabolism of, 290-96 Carotenoids, reviews on, 58

Carriers for diphtheria, 62 for scarlatina, 62 Catalase, and streptococcal

infections, 2 Cell wall of Lacteria antigenic nature of, 267 composition of, 229-31, 267 demonstration of, 264 effect of treatment on, 266

nature of, 264 of Streptococcus faecalis, 229

preparation of suspensions of. 227-29 serological reactions of,

228-31 stains for, 226 structure of, 227, 231-33, 264-65

thickness of, 265 Cellular patterns of resistance, 10-12 Cellulose

hydrolysis of, 297 synthesis of, 299 Cellulose decomposition by plant parasites, 355 role of anaerobes in, 180 Centrales, development of,

322-23 Chemotherapy and drug resistance, 90-92 antimicrobial, 85-110

multiple, 90 of pox virus infections, 240 of urinary tract infections, 108 problems of persisters

against, 103-4 role of host in, 99-101 Chloramphenicol, action of, on tricarboxylic acid

cycle, 291-92 Chromosomes, of bacteria, effect of radiation on, 262-63

structure of, in Holomastigotoides, 312 Ciliata,

cytology of, 319-22 development of, 319-22 mutants of, 321 Ciliates, carnivorous,

nutritional requirements of, 201-3 Ciliates, nutrition of, 193-203 Citrate splitting enzyme, 278

Citrulline, biosynthesis of, 337-39 Classification of anaerobic

bacteria, 175-77 Clostridia (see also anaerobic bacteria).

173-84 Clover, fungal parasites of, 127

succession of fungi in, 131 Coccidia, developmental cycle of

(Figure), 318 sexual reproduction of. 317-19 Coenzyme A, B-alanyl

complex with, 344 Cofactor C, 144-45 Colpidium, nutritional requirements of, 199-201

phases of, 307-9 Conjugatae, development of, 325-26

Conjugation in yeast, chemical control of in dual cultures, 134-35

Corticosteroids, value of, in treating infections, 103 Corticotropin, and infection,

101-3 Cortisone, and infection, 101-3

generalized infection in, 246 strain differences in virus of. 246

Crossing over, Cleveland's theory of, 312 in fungi, markers for, 395-97

mitotic, in fungi, 395-97 Cyanide, as carbon and

nitrogen source, 296 Cysteine desulfhydrase, 331 Cytoarchitecture of bacteria, 254

Cytogenetics of slime molds, 37-44 Cytology of bacteria, 253-70

Cytology of Ciliata, 319-22 Cytology of Holomastigotoides, 311-12

Cytoplasmic membrane, 231-33, 265

Damping-off, parasitic fungi in, 119-20, 126 Deaminase,

alanine, 330 diaminopimelic acid, 330 serine, 330-31 threonine, 330-31

Deamination, 330-31 Decarboxylases, amino acid, 329-30

Defense mechanisms, of plants, 357-58 5-Dehydroshikimic acid, formation of, 290

Deoxyribose formation, in bacteria and phage, 284 Desulfhydrase, cysteine, 331 Detergents, effect of, on growth of Tetrahymena, 195-96

Dextransucrase, 296 Diaminooxidase, inhibition of, 58

Diaminopimelic acid, 150-51 Diatoms, development of, 322-25

Dihydroxyacetone phosphate, pathways of formation of, 282

Copulation, in Chlamydomonas, Diphtheria, immunization against, 65 Dipicolinic acid, formation of, from diaminopime-

lic acid, 344 Disease (see also infectious and plant diseases), role of host in, 99-101

Division, differential, of Trichonympha, 311 Drug resistance, and chemotherapy, 90-92

Dysentery, carriers of, 62 prophylaxis of, 67-68 vaccines for, 67-68 variant agents of, 62

Ecology of slime molds, 47-Ectromelia, relationship

of, with other pox viruses, 244-45 Electron microscope, observation of bacteria with, 255

Endogenous respiration, influence of substrates on, 286

Endotoxins, corticosteroids in therapy against, 102-3 Enteritis, hemorrhagic, 181 Enterocolitis, staphylococcal, 93-94

Enzymes (see also individual enzymes),

adaptive and constitutive. of plant pathogens, 353-54 bacterial, particulate and

soluble fractions of, 286-87 intracellular localization

of 286-87 nutritional requirements for formation of, 160-61

of carbohydrate dissimilation, 276-78 of microorganisms (Russian

literature), 58 role of, in extension of plant parasites, 354-55 role of, in plant diseases,

358 Epidemiology, 61 Ergot poisoning in cattle, fungal parasites in, 122 Ethanol, utilization of, by

yeast, 281 Ethionine, and protein synthesis, 343-44

Eucoccidium dinophili, developmental cycle of, 318

Fatty acids. and microbial nutrition, 156 oxidation of, 295 unsaturated, and CO2 requirements, 156

Flagella, bacterial, general nature of, 267-70 Fermentation pathways, in Aerobacter aerogenes.

279 in Clostridium propionicum, 281

in Escherichia coli, 279 in lactic acid bacteria, 280-81

in Leuconostic mesenteroides

in Microbacterium lacticum, 280-81

in Pasteurella pestis, 283-84 in Propionibacterium, 281

in Pseudomonas formicans, 282

Hemagglutination by

anaerobic bacteria, 177-78

Hemagglutination by vaccinia virus, 241

Hemagglutins, composition of vaccinal, 241

Hemolysis, thermal shock,

effect of detergents on,

Hepatitis, epidemic, bacterium

associated with, 52

Histamine,

Fibrinogen, reaction of, with staphylococci, 5 Fibroma, relationship with other pox viruses, 248 Flagella. antibodies against, 228 changes in, induced by antibodies, 228 chemical nature of, 228 reaction of, 228 Flavoproteins of Streptococcus faecalis, 278 Flax retting, 180 Folic acid, derivatives of, 144 factors influencing need for, by Tetrahymena, 195 microbiological assay for. 144 Folinic acid, 144-45 Food poisoning, anaerobic bacteria and, 181 Foraminifera, cycle of development of (Rotaliella, Figure), 316 development of, 314-17 sexual differentiation in, 314-17 Formate exchange, 289 Formic acid, microbial utilization of, 52 Fowl pox. 247 Fruit spoilage, synergistic fungi and, 133-34 Fruiting bodies, of slime molds, 29, 34-37 culmination of, 34-35 origin of component tissues, 35-36 regulation of properties of, 36-37 Fungi fusion of unlike nuclei in, 394- Growth, haploidisation in, 397-98 inhibitory agents against, 108 Growth factors (see also metabiosis in, 129-33 mutual relationships between, 115-36 mutualistic enhancement of virulence of, 127 nonsymbiotic relationships between, 129-36 nutrition of, 141-65 parasexual cycle in, 393-99 parasitism in, 116-29 significance of parasexual cycle in, 398-99 symbiotic relationships between, 116-29 synergism in, 133-36

synergistic relation-

135-36

ships in multiplication of,

in yeast, 279, 281

Galactose, fermentation of, Gas gangrene, 182 Gastroenteritis, virus as causative agent of, 63 Genetic analysis of Chlamydomonas, 309 Genetics of Ciliata, 321-22 of slime molds, 37-44 Giantism in Suctoria, 202-3 Glaucoma, nutritional requirements of, 199-201 Glucosamine, formation of, 299 Glucose, pathways of oxidation of, 283 Glucose-6-phosphate dehydrogenase, 276 Glutamine, biosynthesis of, 339-41 Glutamic acid, metabolism of, 339-41 Glutamyl peptides, biosynthesis of, 339-41 Glutathione, biosynthesis of, 343-44 Glutathione synthetase, 343 Glyceraldehyde-3-phosphate dehydrogenase, 277 Glycerol, oxidation of, 283 Glycine, biosynthesis of, 341-42 Glycogen, yeast, nature of, 300 Glycolysis, by Bacillus subtilis, 285 by yeast, 285 Goat pox, relationship with other pox viruses, 248 Grain, succession of fungi in, 131-32 of slime molds, 21-25 synchronous, 262 individual agents), 141-65 bifidus, 157 bioterin (crithidia), 158 coline, 158 glutamine, 158 hormones as, 159 miscellaneous, 156-57, 163 pentoses, 158 polyamines, 158 rumen bacterial, 158-59 summary of, 164 unknown, 159 unknown protein, for slime molds, 25 Guanase, 345

Guanine, deamination of, 345

Haploidisation in fungi, 397-98

effect of, on endothelial cells, 10-11 increased sensitivity to, 15 Histidine biosynthesis of, 149-50, 333 inhibition of uptake of, 336 metabolism of, 333-36 peptides of, and tetanus toxin formation, 336 Homoserine, biosynthesis of, 342 Hormones, effect of, on phagocytosis, 10-11 Hyaluronic acid, synthesis of, 298-99 Hydrogenase, 287-89 assay for, 287 Hydrogenlyase, 287-89 assay for, 287 system, scheme for, 288 Hydrolyases, carbohydrate, 297-98 Hypersensitivity, to antibiotics, 87-88 I Immunity, cross, against pox viruses, 242-43 Immunity, "third factor" in, 64 Immunology, role of nervous system in, 70-72 Incubation period in plant infections, 351-65 Indol, biosynthesis of, 290, 344 Industrial fermentations, miscellaneous, 58 Industrial microbiology, use of variants in, 56 Infection (see also infectious and plant diseases), and resistance, enzymatic changes in, 3-5 and surface activity, 5-6 by pox viruses, 243 determinant patterns of resistance to, 3-10 dispersal of, 5-6 effect of diet on resistance to, 3-5 effect of hormonal changes on, 7-8

effect of inorganic agents

on, 9

effect of mucins on, 8-9

effect of polysaccharides on, 7-8 effect of properdin on, 13 effect of route of injection on, 5 effect of sex hormones on, 7-8 effect of somatotrophic hormones on, 7 enhancement of, 5 factors influencing resistance to, 1-16 genetic factors in resistance against, 1-3 hormonal determinants of, 8-8 influence of adrenalectomy and cortisone on, 7 influence of corticotropin on, 101-3 influence of cortisone on, 7, 101-3 localization of, 5 mixed, 6 in germ free animals, 6 nonspecific resistance to. reviews on, 1 physiological patterns in resistance against, 1-3 role of capillary permeability in, 8-9 role of endogenous factors in, 61-62 role of permeability factor in, 15 role of properdin in, 12-13 role of proteinases in, 14staphylococcal, 92-95 tissue cultures for study of. 4-5 use of corticosteroids against, 103 Infectious disease. main periods of, 351 natural foci of, 61 role of nervous system in, 70-72 Russian literature on, 61-64 Infectious hepatitis, 62-63 Influenza, type C, epidemic of. 63 Inhibition by antimetabolites, reversal of, 161-63 Inorganic agents, role of, in nutrition, 160 Invertase, 57 cellular location of, 57 inactive state of, 57 Ions, metabolic effects induced by, 285-86 Irradiation, see radiation Isocitratase, 278

Isocitric dehydrogenase, 278 Isoleucine, biosynthesis of, 336-37 Isoniazid, action of, in tuberculosis, 95-97 Itaconic acid, formation of, 293 Metabolism of microorga-

literature), 57-59

Metabolism of nitrogenous

biosynthesis of, 147-48,

growth substitutes for, 343

(Russian literature),

Microorganisms, biology of

Microscopy, fluorescent, 254

Microscopy, phase, 254 "Milk factor" of mice, 64

Mitochondria, from yeast,

N

in infectious disease, 70-72

Neutralistic symbiosis, 127

Nervous system, role of,

dissimilation of, 343

compounds, 329-46

nisms (Russian

reviews on, 329

Methionine,

343

57-59

# Lactic acid decarboxylase.

Lactobacillic acid, 156

Leucine, biosynthesis of,

Leukocytes, factors for, 14

278

Lactonase, 278

336-37

Levansucrase, 296

Lichens, morphology of, 116 293 Mitotic crossing-over, in Life cycle. heterotrophasic, of fungi, 395-97 Mitotic division, of bacterial Foraminifera, 314-17 nuclei, 258-60 of Eucoccidium dinophili in Dinophilus gyrocilia-Molds (see slime molds) tus (Figure), 318 Molluscum contagiosum, relationship with other of Rotaliella heterocaryotica (Figure), 316 pox viruses, 247-48 Mouse pox (see ectromelia) Lipoic acid (thioctic acid). Mucopolysaccharides. as growth factor for protozoa, 194 as resistance factors, 12 complex derivative of, 147 effect of, on infections, 8-9 function of, in oxidations, Mucoproteins as resistance factors, 12 295 history of, 194-95 Mucoproteins, bacterial, 225-26 Lysozyme, action of, on bacteria, 220-Multiplication of fungi 26, 266-67 synergistic relationships inhibition of, by bacterial in, 135-36 constituents, 15-16 Mushrooms, fungal parasites of, 125 Mutants, of Ciliata, 321 Mutation. Malaria, genetics of resisthigh rate of, in unstable ance to, 2 bacteria, 165 Malarial parasites, nutriof plant parasites, effect tional requirements of, of aggressiveness of, 208 353 Malonic acid, decarboxy-lation of, 295 to antibiotic resistance, 91 Mutual relationships, in Maltase, cellular location fungi, 115-36 of 57-58 Mutualistic intestinal Mannitol fermentation, inprotozoa, nutritional duction of, by DNA, 281requirements of, 209 Mutualistic symbiosis, 127-Media, for anaerobic bacteria, 174-75 Myxamoebae (see slime Meiosis, in Phytomonadina, molds) 312-13 Myxoma, relationship of, Metabiosis, in fungi, 129-33 with other pox viruses, Metabolism of carbohydrates, 275-300

effect of various inhibitors

on, 289

reviews on, 275

Metabolism of carboxylic

acids, 290-96

Parasitism,

in fungi, effect of environ-

ment on, 116

Pathogenicity, of fungi,

of fungi, 116-29

Nitrification, 60-61 Nitrogen fixation, 60 Nitrogenous compounds, metabolism of, 329-46 Nonsymbiotic relationships in fungi, 129-36 Nuclear fusion in bacteria, 261 Nuclei. transfer of, in amoeba, 313 unlike, fusion in fungi, 394-95 Nucleic acids. as growth factors for Paramecium, 197-99 biosynthesis of, 154-55 in slime layer, 264 Nucleotides, role of, in protein synthesis, 345 Nucleus, of bacteria, Azotobacter, 254 changes during synchronous growth, 262 compound, 255 confusion of granules with, 255-56 cross sections of, 262 division of, 258-62 effect of radiation on, 262-63 effect of various agents on, 262-63 electron microscopy of, 2 54 Escherichia coli, 256 fixation of, 256-58 fluorescent microscopy of, 254, 258 fusion of, 261 Mycobacterium, 255 Neisseria sicca, 256 phase microscopy of, 254 primary, 255 review on, 254 staining of, 256-58 structure of, 258-62 Nutrient deficiency, and virulence of plant pathogens, 353 Nutrition. of plant parasites in host, 352-53 role of inorganic elements in. 160 Nutritional requirements, inorganic, of Tetrahymena, 195 of Amoebae, 205-6 of bacteria, 141-65 of carnivorous ciliates, 201-203 of ciliates, 193, 203 of Colpidium, 199-201 of fungi, 141-65 of Glaucoma, 199-201 of malarial parasites, 208

of mutualistic intestinal

protozoa, 209 enhancement of, 127 of Paramecium, 196-99 Pectic enzymes, of plant of parasitic amoebae, 208pathogens, 354 209 Pectin, fermentation of, 180 Penicillin (see also antiof parasitic protozoa, 206-209 biotics) of Phytoflagellates, 203-5 hypersensitivity to, 88 of protozoa, 193-209 induction of large cells by, of protozoa and swallow-264-65 ing response, 200-1 Penicillinase, factors of protozoa, reviews on, influencing production 193 of. 161 of slime molds, 21-25, Pennales, development of. 323-25 208 of suctorians, 201-3 Pentose fermentation, pathof symbiotic protozoa, 206ways of, 278-80 209 Pentoses, oxidation of, 284 Tetrahymena, 193-96 Peptides. of trichomonads, 206-8 antibacterial, in inflammaof Trichomonas, 201 tory exudates, 14 of Trypanosomids, 206-8 growth-stimulating activity of, 153-54 of various organisms reversing action of, 153 (summary), 164 utilization of, 153-54 0 Permeability and plant diseases, 356 Oligosaccharides, formation capillary, and role in infection, 8-9 of, 297 One-carbon compounds, changes in, during plant diseases, 361-62 metabolism of, 287-89 Persisters, 103-4 Ornithone, biosynthesis of, 337-39 Phage, Orotic acid, metabolism of, for anaerobic bacteria, 178 nature of, 53 Osteomyelitis, agents of, Phagocytosis, 64 62 effect of hormones on, 10-Oxalic acid, oxidation of, 11 295 effect of peptic enzymes on, Oxidation, mechanisms of, 263-64 282-85 inhibition of, by botulinus Oxidative assimilation, 284 toxin, 64 Phase microscopy, of bacteria, 254 Phenylalanine, biosynthesis Pantetheine, 143 of, 148-49 Pantothenic acid, Phosphoglucomutase, 277 activity of derivatives of. Phosphoribomutase, 277 143 Phylogeny, of slime molds, biosynthesis of, 344 44-45 phosphorylation of, 143 Phytoflagellates, requirement for, by energy sources for, 204-5 ciliates, 201 nutritional requirements Paramecium, nutritional of, 203-5 requirements of, 196-Phytomonadina, genetics of, 99 307-10 Parasexual cycle, Phytopathogenic bacteria, elements of, 394-98 variation of, 56 in fungi, 393 Pickle brines, fungi in, 132 significance of, 398-99 Pigeon pox, 247 steps of, 394-98 Plague, vaccines for, 69 Parasexual recombination, Plant diseases, 399 alteration of assimilation

during, 363-64

during, 362-64

alteration of permeability during, 361-62

alteration of respiration

symbiotic forms, nutrition

of, 206-9

Purines.

345

162-63

Pyrimidines.

reversal of

molds, 33-34

inhibition by,

hibition by,

162-63

biosynthesis of, 154-55,

reversal of antimetabolite

biosynthesis of, 154-55

antimetabolite in-

biochemical reactions 214-16 during, 361 metabolism of, 296-300 defenses of host against, pneumococcal, nature of. 357 59 200 effect of physico-chemical structure of, and precipitin condition of host on. reaction, 263 355-56 synthesis of, 298-300 extension of parasite in synthesis of, effect of Khost, 351-58 general, 364-65 deficiency on, 264 Porphirin, and syntheses of growth of parasite during. chlorophyll and cyto-351-58 chrome, 58 influence of auxins on, 360 Potassium deficiency, and inhibition of, by toxins, 361 polysaccharide synthemetabolic activity of host, sis. 264 and resistance to, 357-Pox viruses, 237-48 58 chemical composition of, pathology of, 360-64 220 physiological changes during, immunological properties of, 240-243 insect vectors for, 243 plant toxic agents against, 356-57 morphology of, 237-39 problems of incubation in. relationships between, 245-48 351-65 reproduction of, 237-39 role of enzymes in spread of. 354-55 susceptibility to chemical role of host nutrients in. agents, 239-40 352-53 transmission of, 243 Properdin, 12-13 role of toxins in, 358-60 spreading factor in, 354-Proline, biosynthesis of, 55 339-41 Plant pathogens, Prophylaxis, use of antibio-tics for, 104-6 effect of mutations on, 353 enzymes of, and infection, Propionic acid fermentation. 281 353-58 metabolic effect of toxic Proteinase, role of, in inagents from, 361 fection, 14-15 peptic enzymes of, 354 Proteins Plant parasites, as nutritional factors, 151cellulose decomposition 53 by, 355 nucleotides in synthesis of, nature of toxins of, 359-60 Protoplasts, of bacilli, 218 pathogenic secretions of. Protozoa. 358-60 mutualistic intestinal restriction of, by host, nutritional requirements 357 of. 209 role of enzymes in extennutrition of, 193-209 sion of, 354-55 parasitic forms, nutrition of, 206-9 toxin formation by, 358-60 reproduction of, 307-26

Plants, defense mechanisms of, 356-58

Pneumococcal polysaccha-

fermenting mutants of,

Pneumococci, mannitol-

Polypeptide, of Bacillus

anthracis, 214-16

metabolism of, 296-300

miscellaneous, 300

of Bacillus anthracis,

bacterial, influence on in-

extraction of, from bacteria,

rides, 299

281-82

Polysaccharides,

225-26

fection, 8-9

studies on, 62 D Rabbit pox. relationships with other pox viruses 247 Rabies, bat-transmitted, characteristics of, 372-90 in Brazil, 372-74 in California, 383, 387-88 in Central America. 380 in Florida, 383-84 in Mexico, 380-82 in Montana, 388 in Ohio, 389 in Paraguay, 374-75 in Pennsylvania, 384-85 in South America, 372-76 in Texas, 385-87 in Trinidad, 376-80 in the United States, 382-89 isolation of, from bats, 369-70 Radiation. effect of, on antibiotic activity, 10 effect of, on bacterial nuclei, 262-63 effect of, on properdin, 13 as determinant of resistance, 9-10 impairment of host's defenses by, 101 Radiolaria, chromosomes of, 314 cytology of, 314 development of, 313 isospores of, 313 swarmer formation of, 314 Recombination, parasexual, in Aspergillus, 393 Redox potentials, and growth of anaerobes, 57 Resistance, adaptive patterns of, 10-16 cellular patterns of, 10-16 determinant patterns of, 3-10 of plants (see plant diseases) Pseudoplasmodium, of slime role of properdin in, 12-13 serum factors in, 13-16 tissue factors in, 13-16 Resistance to infection, factors influencing, 1-16 Respiration, endogenous, effect of metabolites on, 286 Rhizosphere, microflora of, 60 Riboflavin, biosynthesis of, Ribose phosphate, formation of, 284

Q-fever, epidemological

antagonistic action between

chemotaxis and aggregation

aggregation of, 27-32

mutants of, 39-41

axenic cultures of, 24-25

clonal cultures of, 22-23

competition with bacteria

cytogenetics of, 37-44

defined medium for, 25

fruiting bodies of, 34-37

influence of medium on,

developmental physiology of,

genetics of mutant strains of,

ingestion of bacteria by, 23

adsorption of fibrinogen by,

drug resistant strains of,

infection in nurseries by,

as growth factor for

microcolony of (Figure),

Paramecium, 196-97

92-93

64

258

Steroids.

Slime molds.

of 27-28

by, 23-24

ecology of, 47-48

25-37

37-39

23-24

growth promoting activity of.

Straw, succession of fungi in,

Streptomycin, incorporation

Streptomycin resistance, in .

Chlamydomonas, 309

quirements of, 201-3 Sugar beet seedlings.

Succinic dehydrogenase, 278

Suctorians, nutritional re-

of labeled substrates in.

165

286

130-31

Root-rotting fungi, fungal parasites of, 118 Rotaliella heterocaryotica. cycle of development of (Figure), 316 Russian microbiological journals, 52 Russian microbiological literature, 1955, 51-72 general, 57-61 immunology, 64-70 infectious diseases, 61-64 metabolism, 57-59 morphology, 52-57 role of nervous system in infection and resistance. 70-72 soil. 59-61 systematics, 52-57 vaccination, 65-70 variation, 52-57

of diatoms, 322-25

of Pennales, 323-25

42-44

of Foraminifera, 314-17

Sexuality, in slime molds,

Sheep pox, relationship of,

with other pox viruses,

Silkworms, Serratia marces-

cens infections of, 62

Slime layer of bacteria, 263-64

of Phytomonadina, 307-10

water, 59-61 isolation of, 47-48 Rusts, as hosts for other life cycle of, 22 fungi, 123-24 mass culture of, 22-23 mutant strains of, 37-39 nutritional requirements of, 206 Scarlatina, 66-67 phylogeny of, 44-45 Schwartzman reaction, effect plasmodia of, 33-34 of various agents on, 11-12 pseudoplasmodium of, 33-34 Sedoheptulose phosphate. range of bacteria as food formation of. 284 for, 23 Septa, of bacteria, demonstrarelation to bacteria in soil, tion of, 218 48 Serine, sexuality in, 42-44 biosynthesis of, 341-42 specificity of aggregation of, dissimilation of, 341-42 28-29 synthesis of, by Tetrahymena. synergistic effects between, 195 39-42, 135 Serological tests, for various taxonomy of, 45-47 infections, 70 Soil. Sex-determination, in Coccidia, clostridia in, 179-80 317-19 microbiology of, 59-61 Sex-specific substances, in slime molds and bacteria in, Chlamydomonas, 308 40 Sexual cycles in fungi (see Spores also parasexual), 394 alanine and germination of, Sexual phenomena 344 in Chlamydomonas, 307-9 cleavage of adenosine by, in Phytomonadina, 307-10 345 in Ciliata, 319-22 Staining, of bacterial nuclei. Sexual reproduction, 256-58 of Centrales, 322-23 Staphylococcal infections, of Coccidia, 317-19 92-95 of Conjugatae, 325-26 Staphylococci,

succession of fungi in. Sulfate reduction, and oxidation of organic acids, 294 Superinfection, following use of antibiotics, 89-90 Suppressors, as markers in fungi, 396 Swine pox, relationship with other pox viruses, 248 Symbiosis. and bacterial growth, 163-65 antagonistic, 116-27 between fungi, 116-29 concept of, 115-16 mutualistic, 127-29 neutralistic, 127 types of, 116 Symbiotic relationships in fungi, 116-29 Synchronization of bacterial growth, and nuclear morphology, 262 Synergism between antibiotics, 109-10 between fungi, 133-36 between slime molds, 39-41 Synthesis, of polysaccharides, 298-300 Systematics, of slime molds, 45-47 Taxonomy of Acrasieae, 45-47 of anaerobic bacteria, 174-77 Tetanus, 182 immunization against, 65 Tetanus toxin, nutritional requirements for formation of, 160 Tetrahymena, nutritional requirements of, 193-96 Thermal shock hemolysins, effect of detergents on, 6 Thermophilic bacteria, 53 Staphylococcus flavo-cyaneus, Thiamine. biosynthesis of, in Neurospora, 141 microbiological assay for, 141 Thioctic acid (see lipoic acid) Thiotransacetylase, 294 Threonine, biosynthesis of, 342 Thymine deficiency, and formation of xylose isomerase, 155 Tissue cultures, for study of infections, 4-5 "Tissulins", 64 Toxins. effect of cortisone on action of, 7 inhibition of plant pathogens by, 361 of anaerobic bacteria, 178-79 of plant pathogens, 358-60 production of, 178-79 proteases and formation of. 58 role of, in plant diseases, 358-60 Toxoids, effectiveness of, 179 Transaldolase, 276-77 Transaminases, distribution of, 332 Transamination, 332-33 Transglycosidases, 296-97 Transglycosidation, 296 Transhydrogenase, 345-46 Transketolase, 276 Tricarboxylic acid cycle, in various bacteria, 290-92 synthetic function of, 293 Trichomonads, nutritional requirements of, 206-8 Trichomonas, nutritional requirements of, 201 Trypanosomids, nutritional requirements of, 206-8 Tryptophan, biosynthesis of, 148 Tuberculosis, antibiotic therapy of, 95-99 factors influencing development of, 2-3

genetics of resistance to,

immunization against, 67 lipotropic molecules and resistance to, 5-6 therapy of, 95-99 Tularemia, epidemiology of, 61 Tumors, cultures of, 63-64 Turkey pox, 247 Types of Klebsiella pneumoniae, 264 Typhoid, relation of, to Viantigen, 62 Tyrosine, biosynthesis of, 148-49 Uracil, fate of, in pyrimidine-requiring mutants,

Urease, cellular location of,

Ureidosuccinic acid, biosynthesis of, 155, 339 Uric acid, dissimilation of, 345

58

Vaccines.

Brucella, 69

cells and cellular constituents for, 68-69 influenza, 70 plague, 69 rickettsial, 69-70 tularemia, 69 Vaccinia, relationship of, with other pox viruses, 242, 246-47 Vaccinia virus, strains of, 246 Valine, biosynthesis of, 336-37 Variation, bacterial, influence of environment on, 54-55 of Bacillus subtilus, 53 of dysentery bacteria, 62 of phytopathogenic bacteria,62 of tubercle bacilli, 53 Variola, and alastrim,

Vi-antigen, relationship of, to virulence, 62 Virulence, maintenance of, in tubercle bacilli, 53 Virus multiplication, influence of, on enzymes, 59 Viruses (see also individual agents). classification of, 237 cucumber mosaic, 53 course of infection by, 243-45 cultivation of, 58-59 failure of antibiotics against, 106 nature of, 53 nomenclature of, 237 polyedric, 53 pox, 237-48 tobacco mosaic, electron microscopy of, 53 variation of, 56-57 Vitamin B<sub>6</sub>, activity of analogs of, 142 as growth factor, 141 Vitamin B<sub>12</sub>, effect of salts on activity of. 142 microbiological assay for, 142-43, 204 utilization of, by Euglena, 203-4

relationships between,

245-46

Water, microbiology of, 59-61 Wound bacteriology, 182 Whooping cough, 66

Xylose, utilization of, 284 isomerase, 155, 277

Yeast glycogen, structure of. 299

